

**308-630A SOFTWARE DEVELOPMENT ENVIRONMENT TECHNIQUES.** (4) (3 hours) (Prerequisite: 308-434) The course aims to teach the main features of, and the techniques to construct, Software Development Environments (SDEs). Students would benefit from this course by obtaining an understanding of the practical problems in large scale software development projects, and how formal and practical approaches may be put to use in solving these problems.

**Professor Madhavji**

**308-631A SOFTWARE PROCESS ENGINEERING.** (4) (3 hours) (Prerequisite: 308-434) Software is critical; the record is poor, and improvement action is needed. The quality of a software system is governed by the quality of the process used to develop and maintain it. The course aims to describe the technical and managerial topics critical in the design, engineering and management of software processes.

**Professor Madhavji**

**308-644B PATTERN RECOGNITION.** (4) (3 hours) Techniques for smoothing, approximating and enhancing spatial and temporal data. Feature extraction and shape measurement using spatial moments and medial axis transforms. Detecting structure using Hough transforms and proximity graphs. Discriminant functions. Neural networks. Bayesian decision theory. Feature selection. Estimation of misclassification. Nearest neighbor decision rules. Applications.

**Professor Toussaint**

**308-647B ADVANCED CRYPTOGRAPHY** (4) (3 hours) (Prerequisite: 308-547). Information theoretic definitions of security, zero-knowledge protocols, secure function evaluation protocols, cryptographic primitives, privacy amplification, error correction, quantum cryptography, quantum cryptanalysis..

**Professor Crépeau**

**308-648B MOTION PLANNING AND ROBOTICS.** (4) (3 hours) (Given in alternate years.) Topics in motion planning, including: algorithms and complexity results for collision avoidance; the configuration space approach; the algebraic cell decomposition approach; motion planning using Voronoi diagrams; object representation schemes.

**Professor Whitesides**

**308-650B ANALYSIS OF COMBINATORIAL ALGORITHMS.** (4) (3 hours) Design, implementation and analysis of efficient combinatorial algorithms for computing shortest paths, network flows, minimum cost network flows, spanning trees and matching in graphs. Applications to reliability of networks, critical path, transshipment, vehicle routing and machine sequencing problems. Efficient use of data structures to reduce running time.

**Professor Avis**

**308-675A PARALLEL SEARCH PROBLEMS.** (4) (3 hours) A study of recent work in parallel search techniques. Algorithms to be considered are: parallel branch and bound, parallel minimax and parallel resolution techniques for theorem proving. Students will be expected to write programs implementing algorithms for parallel search on the School's 32-processor BBN parallel computer.

**Professor Newborn**

**308-690A PROBABILISTIC ANALYSIS OF ALGORITHMS.** (4) (3 hours) Probabilistic analysis of algorithms and data structures under random input. Expected behavior of search trees, tries, heaps, bucket structures and multidimensional data structures. Random sampling, divide-and-conquer, grid methods. Applications in computational geometry and in game tree searching. Combinatorial search problems. Algorithms on random graphs.

**Professor Devroye**

**308-694A,B,C RESEARCH PROJECT I.** (6)\* Ongoing research pertaining to project.

**308-695A,B,C RESEARCH PROJECT II.** (6)\* Ongoing research pertaining to project.

**308-698A,B,C THESIS RESEARCH I.** (9)\* Ongoing research pertaining to thesis.

**308-699A,B,C THESIS RESEARCH II.** (15)\* Ongoing research pertaining to thesis.

**308-700A PH.D. COMPREHENSIVE EXAMINATION.** (4)

**308-701A,B SUMMER THESIS PROPOSAL AND AREA EXAMINATION.** (4)

**308-760A ADVANCED TOPICS: THEORY I.** (4)

**308-761B ADVANCED TOPICS: THEORY II.** (4)

**308-762A ADVANCED TOPICS: PROGRAMMING I.** (4)

**308-763B ADVANCED TOPICS: PROGRAMMING II.** (4)

**308-764A ADVANCED TOPICS: SYSTEMS I.** (4)

**308-765B ADVANCED TOPICS: SYSTEMS II.** (4)

**308-766A ADVANCED TOPICS: APPLICATIONS I.** (4)

**308-767B ADVANCED TOPICS: APPLICATIONS II.** (4)

\* Restricted to Computer Science students.

## 20 Culture and Values in Education

Department of Culture and Values in Education  
Education Building  
3700 McTavish Street, Room 440  
Montreal, QC H3A 1Y2

Telephone: (514) 398-6972 or 398-5068

Fax: (514) 398-4642

Website: <http://www.mcgill.ca/cve/cve.html>

*Chair* — David C. Smith

*Director of Graduate Programs* — TBA

### 20.1 Staff

#### *Professors*

Thomas A. Francoeur; B.A. Lic. Ped., D.Ed.(Montr.), M.A.(Ott.),  
Dipl. Pst. Theol.(Brussels)

Ratna Ghosh; B.A.(Calcutta), M.A., Ph.D.(Calg.), F.R.S.C.

(*William C. Macdonald Professor of Education*)

Barry Levy; B.A., M.A., BRE(Yeshiva), Ph.D.(N.Y.U.)

David C. Smith; B.Ed., M.A.(McG.), Ph.D.(Lond.), F.C.C.T.,  
F.R.S.A.

R. Lynn Studham; N.D.D.(Sunder.), A.R.A.(Royal Acad., Copen.),  
M.A.(E. Carolina), C.S.G.A., S.C.A.

#### *Associate Professors*

Martin Jeffery; B.A., S.T.L., M.A.(Ott.) (PT)

Yarema G. Kelebay; B.A., B.Ed.(Montr.), M.A.(Sir G.Wms.),

Ph.D.(C'dia) (*joint appt. with Educational Studies*)

William Lawlor; B.Com., B.Ed.(Montr.), M.A., Ph.D.(Ott.) (PT)

Ronald Morris; B.Ed., M.A., Ph.D.(McG.)

Boyd E. White; B.A.(Sir G.Wms.), B.F.A.(C'dia), M.F.A.(Inst.

Allende, Guanajuato), Ph.D.(C'dia)

#### *Assistant Professors*

Spencer Boudreau; B.A.(Don Bosco), B.A., M.A.(Sherb.),

Ph.D.(C'dia)

Eric Caplan; B.A.(Tor.), M.A.(Hebrew University), Ph.D.(McG.)

Kevin McDonough; B.A., B.Ed., M.Ed.(Alta.), Ph.D.(Ill.)

Elizabeth Wood; B.F.A.(York), B.F.A.(C'dia), Dip. Ed., M.A.,  
Ph.D.(McG.)

#### *Faculty Lecturer*

Joan C. Russell; B.Mus., L.Mus., M.Ed., Ph.D.(McG.)

#### *Adjunct Professors*

Henry A. Giroux; B.S.(S. Maine), M.A.(Appalachian St.),

Ph.D.(Carnegie-Mellon)

Jaswant K. Guzder; B.Sc., M.D.C.M., Dip. Psychiatry(McG.)

Gabriel Moran; B.A., M.A., Ph.D.(Catholic U. of America)

Peter Roche de Coppens; B.S.(Col.), M.A., Ph.D.(Fordham),

M.S.W.(Montr.)

### 20.2 Programs Offered

The Department offers M.A. (thesis and non-thesis options) and Ph.D. (*ad hoc*) degrees. Prospective applicants to the Ph.D. (*ad hoc*) program should contact the Department at (514) 398-5068.

Applicants should be advised that these degrees do not confer certification to teach in the province of Quebec.

The M.A. program is designed to support enquiries into the meaning and purpose of education, to help candidates gain facility

in appropriate research skills, and to develop innovative approaches to educational thought and practice.

The program encourages research into educational issues that have a culture and/or values orientation as a key investigative focus on more specific topics covered in the department – such as philosophy of education, international and comparative education, intercultural education, development education, gender education, religious/spirituality education, values/moral education, peace education, art and aesthetics education.

Students are expected to plan the general direction of their program with their advisor(s), taking into account their background, interests, professional and academic aims.

### 20.3 Admission Requirements

1. Candidates must hold a Bachelor's degree from a recognized university with a minimum standing equivalent to a CGPA of 3.0 out of 4.0.
2. A concentration of courses related to the area chosen for graduate work is required.

### 20.4 Application Procedure

Applications will be considered upon receipt of:

1. Application form.
2. \$60 application fee.
3. A letter of intent, stating professional goals, career plans, reasons for interest in and expectations from the program.
4. Two letters of reference from persons familiar with the prospective student's academic capabilities.
5. Official Transcripts.
6. A sample of the student's writing and, where appropriate, presentation of a portfolio of work.
7. TOEFL test results (if required).

All information is to be submitted directly to the Graduate Program Director in the Department of Culture and Values in Education.

Applicants will be interviewed in person (or by telephone if necessary) by the Director of his/her designated program.

Candidates applying for admission for the first time and wishing to start in the summer session must apply by February 1, and those interested in commencing studies in the fall should apply before April 1.

### 20.5 Program Requirements

#### M.A. CULTURE AND VALUES IN EDUCATION THESIS OPTION (45 credits)

##### Required Courses (6 credits)

- 423-615 (3) Issues in Education I  
423-623 (3) Issues in Education II

##### Complementary Courses (15 credits)

- 411-692 (3) Qualitative Research Methods  
or equivalent

12 credits, selected in consultation with an advisor and with the approval of the Program Director, of which 9 credits will be in the area of concentration and 3 credits in a complementary area. With the approval of the Program Director some courses may be selected from other McGill departments and/or faculties, or other universities.

##### Thesis Component – Required (24 credits)

- 423-690 (6) Thesis Preparation I  
423-691 (6) Thesis Preparation II  
423-692 (12) Thesis Preparation III

#### M.A. CULTURE AND VALUES IN EDUCATION NON-THESIS OPTION (45 credits)

##### Required Courses (18 credits)

- 423-615 (3) Issues in Education I  
423-623 (3) Issues in Education II  
423-633 (12) Special Project

##### Complementary Courses (24 credits)

- 411-692 (3) Qualitative Research Methods  
or equivalent

21 credits, selected in consultation with an advisor and with the approval of the Program Director, of which 15 credits will be in the area of concentration and 6 credits in a complementary area. With the approval of the Program Director some courses may be selected from other McGill departments and/or faculties, or other universities.

##### Elective Course (3 credits)

### 20.6 Courses

The course credit weight is given in parentheses (#) after the course title.

- Denotes courses not offered in 2000-01.

- 423-505 EDUCATION AND SOCIAL ISSUES. (3)
- 423-510 PHILOSOPHICAL THINKING IN THE CLASSROOM. (3)

#### 423-603 READING COURSE. (6)

- 423-604 SELECTED EDUCATIONAL THEORIES. (3)
- 423-605 SOCIAL AND EDUCATIONAL FUTURES. (3)
- 423-606 PHILOSOPHY OF MORAL EDUCATION. (3)

#### 423-607B VALUES EDUCATION: CONTEMPORARY APPROACHES. (3)

A study of the objectives, content and approaches to the teaching of human and moral values. A critical examination of selected programs dealing with human and moral values.

- 423-608 EDUCATIONAL IMPLICATIONS OF SOCIAL THEORY. (3)
- 423-609 EDUCATIONAL AND PHILOSOPHICAL THOUGHT. (3)
- 423-611 PHILOSOPHICAL ASPECTS OF EDUCATIONAL ENQUIRY. (3)

- 423-614 SOCIOLOGY OF EDUCATION. (3)

423-615B ISSUES IN EDUCATION I. (3) An examination of philosophical, aesthetic and values issues in education.

#### 423-616 READING COURSE. (3)

- 423-617 AESTHETICS AND EDUCATION. (3)
- 423-618 PERFORMANCE/STUDIO CRITIQUE I. (3)
- 423-622 STUDIES IN COMPARATIVE EDUCATION. (3)

423-623A ISSUES IN EDUCATION II. (3) An examination of political, cultural, and multicultural issues in education.

423-625A SPECIAL TOPICS: CULTURE IN EDUCATION. (3) In-depth examination of topics in culture in education. Content will vary from year to year and will be announced prior to registration. (Examples: Postmodernism and Education; Antiracist Education; Cultural Relativism and Critical Thinking; Popular Culture and Education.)

423-626 SPECIAL TOPICS: VALUES IN EDUCATION. (3) In-depth examination of topics in values in education. Content will vary from year to year and will be announced prior to registration. (Examples: Spirituality and Education; Patterns of Moral/Spiritual Development; Ethics and Education.)

- 423-630 FOUNDATIONS OF RELIGIOUS EDUCATION. (3)
- 423-631 THEORIES OF RELIGIOUS EDUCATION. (3)
- 423-632 PEACE EDUCATION. (3)

423-633D SPECIAL PROJECT. (12) (Prerequisite: Completion of program course requirements. For non-thesis students only.) An investigation into an educational problem, or issue, or innovative practice in the student's area of concentration, supervised by the student's supervisor and with departmental approval. The student will complete the Special Project by submitting a monograph, project report or production, accompanied by a written component.

423-639B EDUCATION AND DEVELOPMENT. (3) Theories of development and the contribution of education to political, economic and social change.

- 423-641 PATTERNS OF RELIGIOUS DEVELOPMENT I. (3)
- 423-643 WOMEN, EDUCATION AND DEVELOPMENT. (3)

**423-649A EDUCATION IN MULTICULTURAL SOCIETIES.** (3) Majority-minority relations and their implications for educational policy and practice.

● **423-651 SELECTED RESEARCH TOPICS IN THE TEACHING OF RELIGION.** (3)

**423-652A STUDIES IN NATIONAL EDUCATION SYSTEMS I.** (3) This course will study the educational policy of a selected country in depth in the context of the social, political, cultural and economic environment of that country.

● **423-653 STUDIES IN NATIONAL EDUCATION SYSTEMS II.** (3)

● **423-659 PRINCIPLES OF EDUCATION IN HUMAN SEXUALITY.** (3)

**423-672B GENDER ISSUES AND POLICY STUDIES IN EDUCATION.** (3) An examination and analysis of recent research and policy positions on the influence of gender on hiring, performance, promotion and attrition in educational institutions at all levels.

**423-690D THESIS PREPARATION I.** (6) A supervised comprehensive study and written review of the literature in the area of the student's thesis topic.

**423-691D THESIS PREPARATION II.** (6) Supervised independent work leading to an elaborated written proposal of the student's thesis project, to be presented and defended at a colloquium convened by the Department.

**423-692D THESIS PREPARATION III.** (12) Supervised on-going research and writing pertaining to the student's thesis. Submission of the completed thesis for examination and evaluation.

● **426-610 STUDIO TUTORIAL.** (6) (Advisor permission required).

● **426-612 ART EDUCATION TUTORIAL.** (3)

● **426-613 RESEARCH PAPER ON ART EDUCATION.** (6)

● **426-638 EXHIBITION.** (12)

● **429-615 SPECIAL TOPICS IN MUSIC EDUCATION.** (3)

● **429-642 THE ROLE OF MUSIC EDUCATION IN CHILD DEVELOPMENT.** (3)

● **429-652 APPROACHES TO MUSIC CURRICULUM.** (3)

## 21 Dentistry

Department of Dentistry  
Faculty of Dentistry  
McGill University  
3640 University Street, Room M18  
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Canada

Telephone: (514) 398-7227

Fax: (514) 398-8900

*Dean, Faculty of Dentistry* — J.P. Lund

*Associate Dean of Dentistry, Graduate Studies and Research* —  
M.D. McKee

*Interim Director, Graduate Program in Oral and Maxillofacial Surgery* — T.W. Head

### 21.1 Staff

#### Professors

M.C. Bushnell; B.A.(Maryland), M.A., Ph.D.(American U.)

J.P. Lund; B.D.S.(Adel.), Ph.D.(W.Ont.)

C.E. Smith; D.D.S., Ph.D.(McG.)

H. Warshawsky; B.Sc.(Sir G. Wms.), M.Sc., Ph.D.(McG.)

#### Associate Professors

P.J. Chauvin; B.Sc.,D.D.S.(McG.), M.Sc.(W.Ont.), F.A.A.O.P.,  
F.R.C.D.(C)

J.S. Feine; D.D.S., M.S.(Texas), H.D.R.

T.W. Head; B.Sc.(Sir G. Wms.), D.D.S., M.Sc.(McG.), F.R.C.D.(C),  
Dipl. A.B.O.M.S.

M.D. McKee; Ph.D.(McG.)

S. Schwartz; D.M.D.(Montr.), M.Sc. Cert. Pedo.(Boston), F.I.C.D.,  
F.A.C.D.

E.D. Shields; B.Sc.(BallState), D.D.S., Ph.D.(Ind.)

#### Assistant Professors

P.J. Allison; B.D.S., F.D.S.R.C.S.,M.Sc.(London), Ph.D.(McG.)

M. Dagenais; D.M.D.(Montr.), Dip. Oral Radiology(Tor.)

J.R. Emery; D.D.S., M.Sc.(McG.), F.R.C.D.(C), Dipl. A.B.O.M.S.

E.P. Klemetti; D.D.S.(Helsinki), Ph.D.(Kuopio, Finland)

#### Adjunct Professors

A. Charbonneau; D.M.D., M.Sc., Ph.D.(Montr.)

E. Franco; B.Sc.(Estadual de Campinas), M.P.H.,  
Dr.P.H.(N. Carolina)

S. Marchand; (UQAT), M.Sc.(UQTR), Ph.D.(Montr.)

D.J. Ostry; B.A.Sc., M.A.Sc., Ph.D.(Tor.)

E. Sacher; B.S.(CCNY), Ph.D.(Penn. State)

#### Associate Member

E.G. Gisel; B.S.(Zurich), B.S., M.S., Ph.D.(Temple)

## 21.2 Programs Offered

### M.Sc. in Dental Sciences

The goal of this program is to train students in research in the dental sciences which comprise a number of disciplines relating to the functioning of the oro-facial complex.

Please consult the Graduate Secretary, Department of Oral Biology, for further details.

### M.Sc. in Oral and Maxillofacial Surgery

A residency training program in Oral and Maxillofacial Surgery provides a candidate with a comprehensive background for the practice of Oral and Maxillofacial Surgery as a specialty.

During the four years of the program the candidate serves as a resident principally at the Montreal General Hospital. During this time the resident is given increasing responsibility for the care of in-patients and out-patients, as well as being required to fulfill certain basic science courses and other assignments. A research project must be undertaken, followed by a Master's thesis.

The program is open to one candidate per year.

## 21.3 Admission Requirements

### M.Sc. in Dental Sciences

Students who have successfully completed the D.D.S./D.M.D. degree or a B.Sc. degree with a CGPA of 3.0 in any of the disciplines in the Health Sciences (Anatomy, Biochemistry, Microbiology and Immunology, Physiology) or related disciplines (Biology, Chemistry, Physics, Psychology) are eligible to apply for admission to a graduate program in the Faculty of Dentistry leading to the M.Sc. degree in Dental Sciences. In addition to submitting GRE scores, TOEFL tests must be passed in the case of non-Canadians whose mother tongue is not English.

The number of candidates accepted each year will depend on the elective courses and research facilities available which are applicable to the candidate's area of expertise.

### M.Sc. in Oral and Maxillofacial Surgery

Candidates for this program must possess a D.D.S. or D.M.D. degree or its equivalent, and be acceptable to l'Ordre des Dentistes du Québec as a training candidate in a hospital.

## 21.4 Application Procedures

### M.Sc. in Dental Sciences

All applications must include an up-to-date official transcript of academic performance, two letters of recommendation and a brief resume indicating their particular field of interest for the M.Sc. degree. B.Sc. students who have not obtained eligible qualifications will be required to make up for deficiencies in their academic profile by taking a qualifying year.

Students must be accepted by a research director before the Faculty approves the application, prior to final acceptance by the Faculty of Graduate Studies and Research.

Deadline for receipt of the completed application is March 1 for Fall; and November 1 for Winter.

Applications may be obtained by writing to Office of the Associate Dean, Graduate Studies and Research, Faculty of Dentistry.

### M.Sc. in Oral and Maxillofacial Surgery

Applications must be submitted by September 15.

Information for financial support for this program may be obtained by writing to Dr. T.W. Head, Interim Director of the program.

Further information may be obtained by writing to Graduate Program in Oral and Maxillofacial Surgery, Faculty of Dentistry, McGill University, 3640 University Street, Montreal, Québec H3A 2B2.

## 21.5 Program Requirements

All students who are registered in Graduate Clinical Programs in the Faculty of Dentistry, McGill University, and who are not already registered with l'Ordre, must register with l'Ordre des Dentistes du Québec. Further information may be obtained from the Registrar of l'Ordre des Dentistes du Québec, 625 René-Lévesque Boulevard West, Fifteenth Floor, Montreal, Québec H3B 1R2.

### M.SC. IN DENTAL SCIENCES

The M.Sc. degree should normally be completed within 2 years of full-time study.

#### Required Courses (7 credits)

513-607A	(3)	Principles of Inferential Statistics in Medicine (or equivalent course)
4 credits, one graduate seminar		
590-671D		Graduate Seminars in Dental Sciences
590-771D		Graduate Seminars in Dental Sciences

#### Suggested Complementary Courses (8 – 14 credits)

590-562B	(2)	Calcified Tissues
590-654B	(3)	Mechanisms and Management of Pain
504-632D	(6)	Experimental Morphology
504-663D	(9)	Histology
177-524B	(3)	Topics in Molecular Biology of the Gene

Other complementary courses in the University may be taken with the approval of the supervisor or research director.

#### Thesis Research Courses (24 – 30 credits)

The required number of Master's thesis credits (minimum 24) will be made up from among the following:

590-650A,B,C	(3)	Thesis Research Course I
590-651A,B,C	(6)	Thesis Research Course II
590-652B,C,D,E,G	(9)	Thesis Research Course III
590-653A,B,D,K	(15)	Thesis Research Course IV

### M.SC. IN ORAL AND MAXILLOFACIAL SURGERY

Duration: Four calendar years commencing July 1. The following courses are included in the program:

590-611C,D	(9)	Oral and Maxillofacial Surgery I Seminars
590-612C,D	(24)	Oral and Maxillofacial Surgery I Clinical
590-613C,D	(3)	Anatomy/Surgical Anatomy
590-621C,D	(12)	Anaesthesia
590-622A,C,D	(6)	General Surgery
590-623A,C,D	(4)	Surgical Intensive Care Unit
590-624A,C,D	(4)	Emergency
590-625A,C,D	(6)	Internal Medicine
590-626A,C,D	(4)	Pathology
590-631D	(9)	Oral and Maxillofacial Surgery II Seminars
590-632D	(3)	Oral and Maxillofacial Surgery II Clinical
590-633D	(24)	Research (including thesis)
590-641D	(9)	Oral and Maxillofacial Surgery III Seminars
590-642D	(18)	Oral and Maxillofacial Surgery III Clinical
590-643A,D	(6)	Oral and Maxillofacial Surgery III Trauma
590-644C,D	(3)	Surgical Elective

## 21.6 Courses for the M.Sc. in Dental Sciences

**590-671D AND 590-771D GRADUATE SEMINARS IN DENTAL SCIENCES.** (4) One advanced research seminar every week over the fall and winter terms given by invited local and out-of-town speakers on their current research in Oral Biology.

**Dr. E.D. Shields and staff**

**590-562B CALCIFIED TISSUES.** (3) (3 hours of lecture supplemented by 1 hour laboratory or conferences) An advanced course on the morphology and cell biology of calcified tissues. This course provides a problem-oriented analysis of research on the structure and mechanism of formation of connective tissue, cartilage and bone, but with particular emphasis on the tissues of the tooth.

**Dr. H. Warshawsky and Dr. C.E. Smith**

**590-650A,B,C THESIS RESEARCH I.** (3) Independent work under the direction of a supervisor on a research problem in the student's designated area of research.

**Research Supervisors**

**590-651A,B,C THESIS RESEARCH II.** (6) Independent work under the direction of a supervisor on a research problem in the student's designated area of research.

**Research Supervisors**

**590-652B,C,D,E,G THESIS RESEARCH III.** (9) Independent work under the direction of a supervisor on a research problem in the student's designated area of research.

**Research Supervisors**

**590-653A,B,D,K THESIS RESEARCH IV.** (15) Independent work under the direction of a supervisor on a research problem in the student's designated area of research.

**Research Supervisors**

**590-654B MECHANISMS AND MANAGEMENT OF PAIN.** (3) Presentation of the neurobiology of pain and analgesia, clinical pain conditions, basic and applied research methods in the study of pain, and the theory and practice of pain management. The course is designed for graduate students interested in pain mechanisms and clinical residents interested in pain management.

**Dr. M.C. Bushnell and Dr. A. Vainio**

## 22 Developing Area Studies

Centre for Developing Area Studies  
3715 Peel Street  
Montreal, QC H3A 1X1  
Canada

Telephone: (514) 398-3507

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E-mail: [cdasadm@leacock.ian.mcgill.ca](mailto:cdasadm@leacock.ian.mcgill.ca)

Website: <http://www.mcgill.ca/cdas>

*Director* — R.E. Boyd, Ph.D.

*Documentalist* — Iain Blair

E-mail: [cdasdoc@leacock.ian.mcgill.ca](mailto:cdasdoc@leacock.ian.mcgill.ca)

The Centre focuses on research concerning social and economic problems within countries in Africa, Asia, the Caribbean, Latin America and the Middle East, using an interdisciplinary framework. It organizes seminars and conferences on development issues and globalization, primarily in the social sciences.

The Centre has a specialized documentation room, open to the public. In addition, it maintains an active publications program centred around the internationally respected journal *Labour, Capital and Society* and has research fellows and research groups in residence.

The Centre works with an international community of scholars, development groups and the public, and is currently involved in a series of research and development projects focusing on gender, environmental management training, the labouring poor, literacy, and foreign investment.

Graduate students with an interest in international development can apply to become fellows.

## 23 Dietetics and Human Nutrition

School of Dietetics and Human Nutrition  
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E-mail: [laduke@macdonald.mcgill.ca](mailto:laduke@macdonald.mcgill.ca)

Website: <http://www.agrenv.mcgill.ca/dietetic>

Director — Katherine Gray-Donald

### 23.1 Staff

#### Emeritus Professor

Helen Neilson; B.H.S., M.Sc.(McG.)

#### Professors

Peter J.H. Jones; B.Sc., M.Sc.(Br.Col.), Ph.D.(Tor.)

Harriet V. Kühnlein; B.S.(Penn. St.), M.S.(Oregon St.),  
Ph.D.(Calif.) (joint appt. with Faculty of Medicine)

#### Associate Professors

Laurie H.M. Chan; B.Sc., M.Sc.(Hong Kong), Ph.D.(Lond.) (joint  
appt. with Natural Resource Sciences, and Food Science and  
Agricultural Chemistry)

Katherine Gray-Donald; B.Sc., Ph.D.(McG.) (joint appt. with  
Epidemiology and Biostatistics, Faculty of Medicine)

Tim A. Johns; B.Sc.(McM.), M.Sc.(Br.Col.), Ph.D.(Mich.) (joint  
appt. with Plant Science)

Kristine G. Koski; B.S., M.S.(Wash.), Ph.D.(Calif.) (joint appt. with  
McGill Nutrition and Food Science Centre, and Division of  
Experimental Medicine, Faculty of Medicine)

Stan Kubow; B.Sc.(McG.), M.Sc.(Tor.), Ph.D.(Guelph)

Louise Thibault; B.Sc., M.Sc., Ph.D.(Laval)

#### Assistant Professors

David J. Bissonnette; B.Sc.(McG.), Ph.D.(Tor.)

Linda J. Wykes; B.Sc., M.Sc., Ph.D.(Tor.)

#### Faculty Lecturer

Linda Jacobs Starkey; B.Sc.(Mt. St. Vincent), M.Sc., Ph.D.(McG.)  
(University Coordinator, Professional Practice (Stage) in  
Dietetics)

#### Cross-Appointed Professors

Franco Carli (Anaesthesia); Katherine Cianflone (Medicine);  
L. John Hoffer (Medicine); Errol B. Marliss (Medicine);  
Marilyn E. Scott (Parasitology); Simon N. Young (Psychiatry)

#### Associate Members

Louis Beaumier (Montreal Children's Hospital); Selim Kermasha  
(Food Sc./Agr. Chem.); Rejeanne Gougeon (Medicine);  
Jean-François Yale (Medicine)

#### Adjunct Professors

Kevin A. Cockell (Health Canada), Jeffrey S. Cohn (Clinical  
Research Inst. of Canada), Shi-Hsiang Shen (National Research  
Council Canada)

### 23.2 Programs Offered

M.Sc., M.Sc.(Applied) and Ph.D. in Human Nutrition.

Candidates may conduct research in areas of nutritional biochemistry, clinical nutrition, community or international nutrition. In addition, eligible candidates may complete the equivalent of a Dietetic Internship for membership in the professional association for registration as Dietitians and Nutritionists in Canada.

The M.Sc. and Ph.D. programs are research degrees wherein students may conduct research with one of the faculty members. Most areas of research in Human Nutrition are covered in the School and students may wish to work in the areas of basic or applied research.

The M.Sc.(Applied) is intended to provide advanced learning in Nutrition with substantial course work and either a *practicum* in the field of *Dietetics* or a *project in the area of Human Nutrition*. Students need not define their research area prior to enrollment. Prospective students are encouraged to contact faculty members to discuss potential research areas concurrently to applying to the project option.

Research Facilities: Students may conduct research at the School of Dietetics and Human Nutrition, including the Mary Emily Clinical Nutrition Research Unit, the Centre for Indigenous Peoples' Nutrition and Environment (CINE), or at the McGill University Health Centre.

### 23.3 Admission Requirements

#### M.Sc.

Applicants must be graduates of a university of recognized reputation and hold a B.Sc. degree equivalent to a McGill Honours degree in a subject closely related to the one selected for graduate work. Applicants must have at least a cumulative grade point average (CGPA) in McGill University's credit equivalency of 3.2/4.0 during the last four full-time semesters of a completed Bachelor's degree program in nutrition or a closely related field.

Students with limitations in their academic background may be admitted into a qualifying program for a maximum of two semesters if they have met the School's minimum CGPA of 3.2 of 4.0.

**Successful completion of a qualifying program does not guarantee admission to a degree program.**

#### M.Sc. (Applied)

Applicants to the M.Sc.(Applied) project or practicum options must have a B.Sc.(Nutritional Sciences) or equivalent with a GPA of 3.2 or higher. A current resumé and cover letter should accompany the application form, describing reasons for interest in the applied program and career goals. Two letters of reference from persons familiar with the student's academic potential and/or work performance are required. The program is available to students who do not have a working knowledge of French, however, not all project or practicum opportunities will be open to them.

**Project:** All eligible candidates may select the project option. The project option may also serve as a route to dietetics credentialing for some candidates, however, completion of specific undergraduate dietetics course work and practica, with the M.Sc.(Applied) project option, will increase the duration and cost of the program.

**Practicum:** Applicants who have completed a dietetic internship and six months work experience are eligible for the practicum option. The practicum option may also serve as a route to dietetics credentialing for candidates who have completed all undergraduate dietetics course work, have the required nutrition-related work experience, and therefore require only the dietetic internship; however, the duration and cost of the M.Sc.(Applied) will be increased.

#### Ph.D.

Admission for Ph.D. studies normally requires a M.Sc. degree in an area related to the chosen field of specialization.

### 23.4 Application Procedures

Applications for Admission and all supporting documents must be sent directly to:

Student Affairs Office (Graduate Studies)  
Macdonald Campus of McGill University  
21,111 Lakeshore  
Sainte-Anne-de-Bellevue, QC H9X 3V9  
Canada

Telephone: (514) 398-7925

Fax: (514) 398-7968

E-mail: [GRAD@macdonald.mcgill.ca](mailto:GRAD@macdonald.mcgill.ca)

Applications will be considered upon receipt of a signed and completed application form, \$60 application fee, all official transcripts, two signed original letters of reference on official letterhead of originating institution, and (if required) proof of competency in oral and written English by appropriate exams.

**Deadlines** – For **international students**, complete applications with supporting documents must reach the Student Affairs Office (Graduate Studies) at Macdonald Campus at least **eight months** prior to the intended start of program. May 1 for January (winter); September 1 for May (summer); January 1 for September (fall). For **domestic students**, complete applications with supporting documents must reach the office no later than **three months** in advance of intended start of program.

**Application Fee (non-refundable)** – A fee of \$60 Canadian must accompany each application (including McGill students), *otherwise it cannot be considered*. This sum must be remitted using one of the following methods:

1. **Certified** personal cheque in Cdn.\$ drawn on a Canadian bank;
2. **Certified** personal cheque in U.S.\$ drawn on a U.S. bank;
3. Canadian Money order in Cdn.\$;
4. U.S. Money Order in U.S.\$;
5. Bank draft in Cdn.\$ drawn on a Canadian bank;
6. Bank draft in U.S.\$ drawn on a U.S. bank, negotiable in Canada;
7. Credit card (by completing the appropriate section of the application form).

**Transcripts** – Two official copies of all transcripts are required for admission. Transcripts written in a language other than English or French must be accompanied by a certified translation. An explanation of the grading system used by the applicant's university is essential. It is the applicant's responsibility to arrange for transcripts to be sent. **DOCUMENTS SUBMITTED WILL NOT BE RETURNED**. It is desirable to submit a list of the titles of courses taken in the major subject, since transcripts often give code numbers only. Applicants must be graduates of a university of recognized reputation and hold a Bachelor's degree equivalent to a McGill Honours degree in a subject closely related to the one selected for graduate work. The minimum cumulative grade point average (CGPA) is 3.0/4.0 (second-class upper) or 3.2/4.0 during the last two full-time years of university study. High grades are expected in courses considered by the academic unit to be preparatory to the graduate program.

**Letters of Recommendation** – Two letters of recommendation on letterhead or bearing the university seal and with original signatures from two instructors familiar with the applicant's work, preferably in the applicant's area of specialization, are required. It is the applicant's responsibility to arrange for these letters to be sent.

**Competency in English** – Non-Canadian applicants whose mother tongue is not English and who have not completed an undergraduate degree using the English language are required to submit documented proof of competency in oral and written English, by appropriate exams, e.g. TOEFL (minimum score 550) or IELTS (minimum 6.5). The MCHE is not considered equivalent. Results must be submitted as part of the application. The University code is 0935 (McGill University, Montreal); department code is 31 (graduate schools), Biological Sciences - Agriculture.

**Graduate Record Exam (GRE)** – The GRE is required for all applicants to the School of Dietetics and Human Nutrition who are submitting non-Canadian and non-U.S. transcripts.

**Financial aid is very limited and highly competitive. It is suggested that students give serious consideration to their financial planning before submitting an application.**

Acceptance to all programs depends on a staff member agreeing to serve as the student's supervisor and the student obtaining financial support. Normally, a student will not be accepted unless adequate financial support can be provided by the student and/or the student's supervisor. Academic units cannot guarantee financial support via teaching assistantships or other funds.

**Qualifying Students** – Some applicants whose academic degrees and standing entitle them to serious consideration for admission to graduate studies, but who are considered inadequately prepared in the subject selected may be admitted to a *Qualifying Program*. The course(s) to be taken in a *Qualifying Program* will be prescribed by the academic unit concerned. *Qualifying students* are registered in the Faculty of Graduate Studies and Research, **but not as candidates for a degree**. Only one qualifying year is permitted. **Successful completion of a qualifying program does not guarantee admission to a degree program.**

## 23.5 Program Requirements

### M.Sc.

Program requirements for the M.Sc. include a minimum of 45 credits. This is comprised of 31 credits for the thesis (382-680, 681, 682, 683), two credits of required seminars (382-695, 696), and four three-credit graduate courses. The student may be advised to take more than four courses.

### M.Sc. (Applied)

Program requirements for the M.Sc. (Applied) include a minimum of 45 credits. This is comprised of 29 course credits (nine three-credit courses and two credits of required seminars (382-695, 696), and 16 credits of project or practicum courses.

### Ph.D.

Requirements for the Ph.D. include a course of study recommended by the committee including a comprehensive examination (382-701), a research dissertation, and possibly two credits of required seminars (382-797, 798). Course work at the Ph.D. level normally comprises a smaller portion than for the M.Sc. degree. The research program must clearly show originality and be a contribution to knowledge. At least three years are required to meet the Ph.D. requirements. Outstanding students may be permitted to transfer to the Ph.D. program following the first year of M.Sc. study.

## 23.6 Courses

- Denotes not offered in 2000-01.

Some courses are given every second year.

The course credit weight is given in parentheses (#) after the course title.

**382-501A NUTRITION IN DEVELOPING COUNTRIES.** (3) (2 lectures and 1 seminar) (Prerequisite: Consent of instructor.) This course will cover the major nutritional problems in developing countries. The focus will be on nutrition and health and emphasize young children and other vulnerable groups. The role of diet and disease for each major nutritional problem will be discussed. **Staff**

**382-511B NUTRITION AND BEHAVIOUR.** (3) (2 lectures and 1 seminar) (Prerequisite: 382-445A for undergraduate students or consent of instructor.) Discussion of knowledge in the area of nutrition and behaviour through lectures and critical review of recent literature; to discuss the theories and controversies associated with relevant topics; to understand the limitations of our knowledge. Topics such as diet and brain biochemistry, stress, feeding behaviour and affective disorders will be included. **Professor Thibault**

**382-512A,B HERBS, FOODS AND PHYTOCHEMICALS.** (3) (3 lectures) (Prerequisite: Biochemistry I and permission of instructor.) An overview of the use of herbal medicines and food phytochemicals and the benefits and risks of their consumption. The physiological basis for activity and assessment of toxicity will be presented. Current practices relating to the regulation, commercialization and promotion of herbs and phytochemicals will be considered. **Professor Johns**

**382-600A,B ADVANCED CLINICAL NUTRITION I.** (3) (3 lectures) (Prerequisites: Courses in human nutrition, biochemistry and physiology and permission of instructor.) Application of nutrition knowledge in the therapy and support of humans in various physiological and pathological states. The etiology, biochemistry and

pathology of various medical disorders; their nutritional assessment and treatment

**Professor Koski**

● **382-601A,B ADVANCED CLINICAL NUTRITION II.** (3) (3 lectures) (Prerequisites: 382-377B, 382-344B, 382-445A or equivalent and permission of instructor.)

**382-602A,B ADVANCED NUTRITIONAL STATUS ASSESSMENT.** (3) (1 lecture and 1 lab) (Prerequisites: courses in human nutrition, biochemistry and physiology.) The understanding and evaluation of dietary and anthropometric indices used in the nutritional assessment of individuals and groups.

**Staff**

● **382-603A,B NUTRITIONAL TOXICOLOGY.** (3) (Prerequisites: courses in human nutrition, biochemistry and physiology.)

**382-604B INTEGRATED METABOLIC RESEARCH.** (3) (2 seminars and 1 lab visit) (Prerequisites: at least one 500 or 600-level course in nutritional biochemistry, e.g. 342-551B, 342-552B, 342-634B, and permission of instructor.) An in-depth analysis of concepts and investigative approaches to in vivo metabolic nutrition research. Seminars will emphasize stable isotope kinetic studies. Visiting scientists and tours of other laboratories will expose students to different approaches to research.

**Professor Wykes**

**382-606A,B RESEARCH METHODS IN HUMAN NUTRITION.** (3) (3 lectures) (Prerequisites: A graduate course in statistics or permission of the instructor.) Basic approaches, philosophy and techniques used in nutrition research with human population groups. The course will include the formation and criticism of designs for research, sampling techniques, measurement and analysis issues and human research ethics.

**Professor Gray-Donald**

**382-608A,B SPECIAL TOPICS I.** (3) (Prerequisite: permission of instructor and Director of School. Restricted to graduate students in Nutrition.) Prescribed reading, conference, lectures, assignments and/or practical work on selected topics in student's area of specialization. An approved course outline must be on file in the School's office prior to registration.

**Staff**

**382-609A,B SPECIAL TOPICS II.** (3) (Prerequisite: permission of instructor and Director of School. Restricted to graduate students in Nutrition.) An individualized course to allow students to undertake projects in library, laboratory, or field study. An approved course outline must be on file in the School's office prior to registration.

**Staff**

● **382-610B MATERNAL AND CHILD NUTRITION.** (3)

● **382-620A NUTRITION OF INDIGENOUS PEOPLES.** (3) (Prerequisite: One course in nutritional sciences.)

**382-651A,B,C M.Sc. (APPLIED) NUTRITION I.** (3) (Corequisites: 382-606, 382-695) Review of literature and problem definition for both the project option or for placement preparation for practicum option. This course relates to the Human Nutrition M.Sc. (Applied) degree and is required for both project and practicum options.

**382-652A,B,C M.Sc. (APPLIED) PROJECT I.** (3) (Prerequisite: 382-651) Project design and planning.

**382-653A,B,C M.Sc. (APPLIED) PROJECT II.** (3) (Prerequisite: 382-652) Project execution. This project relates to the Human Nutrition M.Sc. (Applied) degree.

**382-654A,B,C M.Sc. (APPLIED) PROJECT III.** (3) (Prerequisite: 382-653) Continuation of project execution and data collection; preliminary analysis. This project relates to the Human Nutrition M.Sc. (Applied) degree.

**382-655A,B,C M.Sc. (APPLIED) PROJECT IV.** (3) (Prerequisite: 382-654) Data analysis. Submission of project report. This project relates to the Human Nutrition M.Sc. (Applied) degree.

**382-656A,B,C M.Sc. (APPLIED) PRACTICUM I.** (3) (Prerequisite: 382-651) Clinical or community placement (4 weeks). Submission of placement report. This practicum relates to the Human Nutrition M.Sc. (Applied) degree.

**382-657A,B,C M.Sc. (APPLIED) PRACTICUM II.** (3) (Prerequisites: 382-656) Continuation of placement (4 weeks). Submission of placement report. This practicum relates to the Human Nutrition M.Sc. (Applied) degree.

**382-658A,B,C M.Sc. (APPLIED) PRACTICUM III.** (3) (Prerequisite: 382-657) Continuation of placement (4 weeks). Submission of placement report. This practicum relates to the Human Nutrition M.Sc. (Applied) degree.

**382-659A,B,C M.Sc. (APPLIED) PRACTICUM IV.** (3) (Prerequisites: 382-658) Continuation of placement (4 weeks). Submission of placement report. This practicum relates to the Human Nutrition M.Sc. (Applied) degree.

**382-660A,B,C M.Sc. (APPLIED) NUTRITION II.** (1) (Prerequisites: 382-653; 382-659 or 382-655) Oral presentation. This presentation relates to the Human Nutrition M.Sc. (Applied) degree, project and practicum options.

**382-680A,B,D,N HUMAN NUTRITION M.Sc. THESIS I.** (6) Independent research under the direction of a supervisor toward completion of the M.Sc. thesis.

**382-681A,B,D,N HUMAN NUTRITION M.Sc. THESIS II.** (6) Independent research under the direction of a supervisor toward completion of the M.Sc. thesis. Presentation of a thesis proposal.

**382-682A,B,D,N HUMAN NUTRITION M.Sc. THESIS III.** (9) Independent research under the direction of a supervisor toward completion of the M.Sc. thesis.

**382-683A,B,D,N HUMAN NUTRITION M.Sc. THESIS IV.** (10) Final submission, thesis defense seminar and approval of the M.Sc. thesis.

**382-695A,B HUMAN NUTRITION SEMINAR I.** (1) Students will present a recent original research article in which the methods and data presentation will be critically analyzed. The article must be approved by the instructor.

**382-696A,B HUMAN NUTRITION SEMINAR II.** (1) Students will present a recent original research article in which the methods and data presentation will be critically analyzed. The article must be approved by the instructor.

**382-701A,B DOCTORAL COMPREHENSIVE EXAMINATION.** (See Faculty Regulations)

**382-797A,B HUMAN NUTRITION SEMINAR III.** (1) Doctoral candidates will present a recent original research article in which the methods and data presentation will be critically analyzed. The article must be approved by the instructor.

**382-798A,B HUMAN NUTRITION SEMINAR IV.** (1) Doctoral candidates will present a group of recent research articles in which the methods and data presentation will be critically analyzed. The articles must be approved by the instructor.

Students may also take courses in other faculties such as Medicine or Education.

## 24 Earth and Planetary Sciences

Department of Earth and Planetary Sciences  
Frank Dawson Adams Building  
3450 University Street  
Montreal, QC H3A 2A7  
Canada

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E-mail: CAROL@EPS.MCGILL.CA  
Website: <http://www.eps.mcgill.ca>

*Chair* — Alfonso Mucci

### 24.1 Staff

#### *Emeritus Professors*

E.W. Mountjoy; B.A.Sc.(Br.Col.), Ph.D.(Tor.)  
W.H. MacLean; B.Geol.Eng.(Colo. Sch. of Mines), M.Sc.(A),  
Ph.D.(McG.)  
C.W. Stearn; B.Sc.(McM.), M.S., Ph.D.(Yale), F.R.S.C.

#### *Professors*

J. Arkani-Hamed; B.Eng.(Tehran), Ph.D.(M.I.T.)

R. Doig; B.Sc., M.Sc., Ph.D.(McG.)  
 D. Francis; B.Sc.(McG.), M.Sc.(Br.Col.), Ph.D.(M.I.T.)  
 A.J. Hynes; B.Sc.(Tor.), Ph.D.(Cantab.)  
 O.G. Jensen; B.Sc., M.Sc., Ph.D.(Br.Col.)  
 R.F. Martin; B.Sc.(Ott.), M.S.(Penn. St.), Ph.D.(Stan.)  
 A. Mucci; B.Sc., M.Sc.(Montr.), Ph.D.(Miami)  
 A.E. Williams-Jones; B.Sc., M.Sc.(Natal), Ph.D.(Queen's)

#### Associate Professors

D. Baker; B.A.(Chic.), Ph.D.(Penn. St.)  
 J. Paquette; B.Sc., M.Sc.(McG.), Ph.D.(Stonybrook)  
 J. Stix; A.B.(Dart.), M.Sc., Ph.D.(Tor.)  
 H. Vali (Director, Electron Microscopy Centre)

#### Assistant Professor

B. Hart; B.A.(McM.), M.Sc.(UQAR), Ph.D.(W.Ont.)

#### Lecturer

S.T. Ahmedali

#### Associate Members

M. Bilodeau (Mining Engineering)  
 B. Volesky (Chemical Engineering)

#### Research Associate

P. Lorrain

## 24.2 Programs Offered

Opportunities for advanced study and research in geology, geochemistry, geophysics, planetary sciences and oceanography are available to qualified students. Graduate programs leading to the M.Sc., and Ph.D. degrees are offered.

Financial assistance is available in the form of demonstratorships, research assistantships and scholarships.

### AREAS OF RESEARCH

#### Economic Geology

Stratigraphy and geochemistry of massive sulfide deposits, alteration systems, mass changes, wallrock stratigraphy; application of fluid inclusions, isotopic, theoretical, and experimental studies of the genesis of granitoid-related Sn-W-Mo-rare metal and epithermal Au-Ag deposits.

#### Environmental Geology and Low Temperature Geochemistry

Low-temperature geochemistry and chemical oceanography; chemical thermodynamics and kinetics of solid solution reactions in natural environments; early diagenesis of marine, coastal, and estuarine sediments; crystal growth mechanisms in low-temperature aqueous solutions and their influence on element partitioning in minerals.

#### Geochronology

U-Pb geochronology, Sr and Nd isotopic tracing, seismic risk assessment (paleoseismology).

#### Igneous Petrology

Origin and evolution of basic magmas in the mantles of the terrestrial planets; non-orogenic magmatism, alkali feldspars as indicators of magmatic and post-magmatic processes; high-temperature geochemistry, experimental investigation of petrogenetic processes, structure and properties of silicate melts and glasses, physical and chemical controls on volcanic eruptions.

#### Planetary Sciences

Geophysical potential fields, dynamics of planetary interiors; global geodynamics and physics of Earth's interior; seismology – tectonophysics, geophysical systems analysis.

#### Sedimentary Geology

Sedimentology of modern and ancient continental margins (clastic sediments, diagenesis, marine geology and plate tectonics); sedimentation and diagenesis, ancient and modern carbonates, Cordilleran structure and stratigraphy.

#### Tectonics

Tectonics and structural geology, transpression in the Canadian Cordillera, origin of the Hudson Bay Arc, gravity features of sutures

in the Canadian Shield, uplift of the Laurentides, paleomagnetism and plate motions.

## 24.3 Admission Requirements

Applicants should have an academic background equivalent to that of a McGill graduate in the Honours or Major program in geology, geophysics, chemistry, or physics (3.0 out of 4.0). The admissions committee may modify the requirements in keeping with the field of graduate study proposed. In some cases a qualifying year may be required.

## 24.4 Application Procedures

Applications and all supporting documents should be received in the Department before May 1st for admission the following September. Applicants requiring financial assistance should apply as early as possible. There are no special forms required to apply for financial aid from the Department, as all applicants will be considered for the awards for which they are eligible.

Candidates should indicate their field(s) of interest when making formal application for admission. Specific inquiries concerning the Department should be addressed to Graduate Admissions, Department of Earth and Planetary Sciences.

## 24.5 Program Requirements

### M.Sc. Degree (45 credits)

The M.Sc. degree program includes:

- 12 credits from formal graduate courses to be chosen with the approval of the research director and Director of Graduate Studies and
- a thesis (33 credits) to be submitted according to the rules of the Faculty and the Department.

### Ph.D. Degree

The Ph.D. degree program comprises:

- an approved program of courses selected in consultation with the student's academic adviser, and approved by the Academic Standing Committee,
- a comprehensive oral examination at the end of the Ph.D.II, and
- research leading to a Ph.D. thesis followed by an oral defense.

Highly qualified B.Sc. graduates may be admitted directly to the Ph.D.I year. Students with the M.Sc. degree may be admitted to either the Ph.D.I or Ph.D.II year, depending on their background. Students are required to take 18 credits of graduate course study in the Ph.D.I year, and 6 credits plus a comprehensive oral examination in the Ph.D.II year. There is no language requirement for the Ph.D. degree.

## 24.6 Graduate Courses

- Denotes not offered in 2000-01.

The course credit weight is given in parentheses (#) after the course title.

- **186-501B CRYSTAL CHEMISTRY.** (3) (2 hours lectures, 1 hour seminar)
- **186-510B GLOBAL GEODYNAMICS AND GEOMAGNETISM.** (3) (3 hours lecture) (Prerequisites: 186-320A, 186-350B, 189-319B or permission of the instructor.)
- **186-519A ISOTOPE GEOLOGY.** (3) (3 hours lectures) (Prerequisites: U2 core program.)
- **186-530A VOLCANOLOGY.** (3) (3 hours lectures) (Prerequisites: 186-212B and 186-321B, or permission of instructor.)
- **186-540B PHANEROZOIC GEOLOGY OF NORTH AMERICA.** (3)
- 186-542A CHEMICAL OCEANOGRAPHY.** (3) (Prerequisites: 180-213A,B, 180-257D or equivalents, or registration in Graduate Program in Oceanography.) History of chemical oceanography. Seawater composition and definition of salinity/chlorinity. Minor and trace-element distribution in the ocean. Geochemical mass balance. Dissolved gases in sea water. CO<sub>2</sub> and the carbonate



system. Chemical speciation. Physical chemistry of seawater. Organic matter and the carbon cycle in the marine environment. Sediment geochemistry. **Professor Mucci**

● **186-545B LOW TEMPERATURE GEOCHEMISTRY AND DIAGENESIS.** (3) (Prerequisites: 180-203A/213B, 186-212B, 186-312B)

● **186-546A DIAGENESIS OF SEDIMENTARY ROCKS.** (3) (2 lecture, 3 lab/seminars) (Prerequisites: 186-212B, 186-220B, 186-312A)

**186-547A THERMOCHEMISTRY OF HIGH-TEMPERATURE GEOLOGICAL SYSTEMS.** (3) (Prerequisites: 180-203/4 or 180-213 or permission of instructor.) The application of thermodynamic principles to igneous and metamorphic petrology and economic geology. Topics include but are not restricted to: solid solutions in minerals, behaviour of geological fluids, phase equilibria, flow processes, estimation of thermodynamic data, etc. **Professor Baker**

● **186-548A MECHANISMS OF IGNEOUS PETROGENESIS.** (3) (2 hours lecture, 1 hour seminar) (Prerequisite: 186-423B)

**186-549B HYDROGEOLOGY.** (3) (3 hours lecture, 1-2 hours lab) (Prerequisite: permission of the instructor) Introduction to groundwater flow through porous media. Notions of fluid potential and hydraulic head. Darcy flux and Darcy's Law. Physical properties of porous media and their measurement. Equation of groundwater flow. Flow systems. Hydraulics of pumping and recharging wells. Notions of hydrology. Groundwater quality and contamination. Physical processes of contaminant transport. **Staff**

**186-550A SELECTED TOPICS IN EARTH & PLANETARY SCIENCES I.** (3) (2 hours seminar, permission of Department undergraduate adviser) Research seminar and readings in topics concerning some aspects of current development in geological sciences. **Staff**

**186-551B SELECTED TOPICS IN EARTH & PLANETARY SCIENCES II.** (3) (2 hours seminar, permission of Department undergraduate adviser) Research seminar and readings in topics concerning some aspects of current development in geological sciences. **Staff**

● **186-570B COSMOCHEMISTRY.** (3) (3 hours lecture) (Prerequisites: 186-220B, 186-210A or permission of instructor.)

● **186-580A AQUEOUS GEOCHEMISTRY.** (3) (3 hours lecture) (Prerequisites: 186-210A, 186-212B or permission of instructor.)

● **186-590B APPLIED GEOCHEMISTRY SEMINAR.** (3) (3 hours seminar) (Prerequisite: permission of instructor.)

**186-601A PETROLOGY OF FELSIC IGNEOUS ROCKS.** (3) (Prerequisite: 186-423A or equivalent.) A review of the mineralogy and phase equilibria relevant to felsic igneous systems. Role of crust and mantle source-areas. Importance of postmagmatic phenomena. Petrogenetic schemes in the current literature. **Professor Martin**

**186-603B PETROLOGY OF MAFIC IGNEOUS ROCKS.** (3) (Prerequisite: 186-423A or equivalent.) A survey of the petrochemistry of basic magmatic provinces with a focus on processes and the origin of terrestrial magmas in upper-mantle source regions. **Professor Francis**

● **186-604D ORE PETROLOGY.** (6) (3 hours lecture or seminar)

**186-613A REGIONAL STRUCTURAL ANALYSIS.** (3) (2 hours lectures, 2 hours lab) Interpretation of structural measurements in complexly-deformed rocks. Regional geometric, kinematic and tectonic analysis. **Professor Hynes**

● **186-631E FIELD STUDIES IN OROGENIC BELTS.** (3) (2-week field course in May, plus assigned papers)

**186-636A TIME SERIES ANALYSIS: ADVANCED GEOPHYSICAL APPLICATIONS.** (3) (3 hours) Analysis of geophysical data represented in time- or space-series form: multichannel and multidimensional stochastic processes and their analysis using a) the methods of linear and non-linear filter theory; b) harmonic analysis; c) probabilistic forecasting/prediction theory; d) procedures in deconvolution; e) estimation and detection theory. **Professor Jensen**

● **186-638A EVOLUTION OF PLANETS.** (3)

**186-644A TOPICS IN ADVANCED EARTH SCIENCES I.** (3) (3 hours lectures or seminars) A survey of a research topic of particular current interest. **Staff**

**186-645B TOPICS IN ADVANCED EARTH SCIENCES II.** (3) (3 hours lectures or seminars) A survey of a research topic of particular current interest. **Staff**

● **186-650A GREENSTONE BELTS.** (3) (2 hours lecture, 3 hours lab)

● **186-655B LITHOGEOCHEMISTRY OF ALTERED ROCKS.** (3) (2 hours lecture, 3 hours lab)

● **186-660D SEMINAR IN OCEANOGRAPHY.** (2)

**186-697A,B THESIS PREPARATION I.** (9) Independent study, theoretical and/or laboratory work in connection with the development of an M.Sc. thesis. Success in the course is dependent on presentation of an adequate progress report to the supervisory committee.

**186-698A,B THESIS PREPARATION II.** (12) Independent study, theoretical and/or laboratory work in connection with the development of an M.Sc. thesis. Success in the course is dependent on presentation of an adequate progress report to the supervisory committee.

**186-699A,B THESIS PREPARATION III.** (12) Independent study, theoretical and/or laboratory work in connection with the development of an M.Sc. thesis. Success in the course is dependent on presentation of an adequate progress report to the supervisory committee.

**186-700D PRELIMINARY DOCTORAL EXAMINATION.**

● **186-706D ADVANCED SEDIMENTOLOGY.** (6) (2 hours lectures or seminar and 3 hours lab)

● **186-708D ADVANCED STRATIGRAPHY.** (6) (3 hours lectures or seminar)

● **186-710A GEOTECTONICS.** (3) (2 hours lectures or seminars)

● **186-713A ECONOMIC GEOLOGY I.** (3) (3 hours seminar) (Prerequisite: undergraduate course in economic geology or permission of the instructor.)

● **186-714B ECONOMIC GEOLOGY II** (3) (3 hours seminar) (Prerequisite: undergraduate course in economic geology or permission of the instructor.)

**186-715B INSTRUMENTAL ANALYSIS.** (3) (3 hours lectures, 3 hours lab) Application of analytical instrumental techniques to obtaining reliable chemical data from complex (geological and environmental) materials, and evaluation of the data in problem solving. Electron Microprobe Analysis (WDS and EDS), Scanning Electron Microscopy, X-ray Fluorescence Spectrometry, X-ray Diffraction, Atomic Spectroscopy (Atomic Absorption, ICP and ICP-MS). Neutron Activation Analysis. **Professor Ahmedali**

● **186-716B ECONOMIC GEOLOGY LABORATORY.** (3) (2 hours lectures, 3 hours lab per week)

● **186-717D ADVANCED EARTH PHYSICS.** (6) (2 hours lecture or seminar and assignments)

● **186-719A ISOTOPE GEOLOGY SEMINAR.** (3) (2 hours seminar and assigned reading) (Prerequisites: 186-519A and permission of instructor.)

● **186-721D RECENT SEDIMENTS AND MARINE GEOLOGY.** (6) (3 hours seminar, lectures and assignments)

**186-725A INDEPENDENT STUDIES IN EARTH & PLANETARY SCIENCES.** (3) (Not available to students who have taken 186-720D. Ineligible for credit in M.Sc. Thesis program.) Research and/or reading project. Independent study under the guidance of qualified staff in areas of special interest to the student.

**186-726B INDEPENDENT STUDIES IN EARTH & PLANETARY SCIENCES.** (3) (Not available to students who have taken 186-720D. Ineligible for credit in M.Sc. Thesis program.) Research and/or reading project. Independent study under the guidance of qualified staff in areas of special interest to the student.

## 25 East Asian Studies

Department of East Asian Studies  
3434 McTavish Street, Room 200  
Montreal, QC H3A 1X9  
Canada

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Chair — K. Dean

Director of Graduate Program — G. Fong

### 25.1 Staff

#### Professor

R.D.S. Yates; B.A., M.A.(Oxon.), M.A.(Calif.), Ph.D.(Harv.)

#### Associate Professors

K. Dean; B.A.(Brown), M.A., Ph.D.(Stan.)

G. Fong; B.A., M.A.(Tor.), Ph.D.(Br. Col.)

T. Lamarre; B.A.(Georgetown), M.A., Ph.D.(Chic.),  
D.Sc.(Aix-Marseille II)

#### Assistant Professors

T. Looser; B.A.(UC Santa Cruz), M.A., Ph.D.(Chic)

J. Solomon; B.A.(Brown), M.A., Ph.D.(C'nell)

#### Faculty Lecturers

J. Chang; B.A.(Taiwan), M.A.(Harv.)

S. Hasegawa; M.A.(Montr.)

M. Kim; B.A., M.A.(Montr.)

B. Wang; B.A.(Heilongjiang), M.A.(Calgary)

### 25.2 Programs Offered

M.A. in East Asian Studies (Ad Hoc).

Ph.D. in East Asian Studies (Ad Hoc).

### 25.3 Admission Requirements

#### General

TOEFL and GRE (if applicable).

Applicants who have an undergraduate degree from outside Canada will need to take the Graduate Record Examination. A minimum TOEFL score of 575 is required for all applicants whose native language is not English.

#### M.A.

Applicants must hold, or expect to hold by September of the year of entry, a bachelor's degree for entry into the M.A. program. Applicants should have a Bachelor of Arts degree with a specialization in East Asia; applicants without this specialization who possess a strong disciplinary background are also invited to apply. Those who have experience with an Asian language, but no formal course work, will be required to take a placement test on admission. Those without knowledge of an Asian language will be required to take three qualifying terms (fall, winter, summer) in which they will complete the second year of language; a minimum of a B+ average must be maintained.

#### Ph.D.

Applicants must hold, or expect to hold by September of the year of entry, a master's degree in East Asian Studies for entry into the Ph.D. program.

### 25.4 Application Procedures

Applications will be considered upon receipt of:

1. application form;
2. two copies of official transcripts sent by the university;
3. two letters of reference;
4. \$60 application fee;

5. current curriculum vitae (resumé) and a statement of purpose (approximately 500 words for Master's and 10 pages for Ph.D.) indicating the field in which the applicant wishes to study and the reasons for applying to the program.

All of the above should be submitted directly to the Graduate Director, Department of East Asian Studies.

Deadline: March 1st for September admissions

### 25.5 Program Requirements

#### Program Requirements for the M.A. Degree (Ad Hoc) (45 credits)

The Department only offers a thesis option. The M.A. program with thesis includes:

- a) four 3-credit courses (12 credits),
- b) one 3-credit seminar in theory/methodology (3 credits),
- c) one 6-credit seminar or two 3-credit seminars (6 credits), and
- d) thesis (24 credits).

#### Language Courses:

1. A maximum of 6 credits of language courses at the 500-level or in a classical Asian language may be counted towards course requirements.
2. Students must have fourth-level language equivalency by the completion of their M.A. program.

#### Program Requirements for the Ph.D. Degree (Ad Hoc)

After successfully completing the M.A. degree or its equivalent (45 credits minimum), a student will be admitted to the second year of the Ph.D. program. The Graduate Studies Committee will assign an advisory committee to advise the student and specify the student's course program.

Exceptional students with appropriate background at the undergraduate level may be admitted directly into the Ph.D. program.

Students must complete at least 24 course credits, with a grade point average of 3.5 or better: this course work must be chosen to identify three distinct fields for the Comprehensive Evaluation. Students may take up to two 3-credit courses or one 6-credit course in another department with the approval of the Graduate Studies Committee.

There are four requirements for obtaining the Doctoral degree:

- 1) Course work – 24 credits at the 600 or 700 level.
- 2) Language – Candidates will be required to demonstrate reading knowledge of a second Asian language, which may include either modern or literary (classical) language, in addition to the primary Asian language of their research. Candidates will also be expected to demonstrate reading knowledge of both French and English. They may also be required to take a third European language, classical (literary) Chinese, or Japanese, if the Graduate Studies Committee decides those languages are essential for the candidate's research.
- 3) Ph.D. Comprehensive Evaluation – After the session in which the course work is completed, and no more than one year later except in exceptional circumstances and approved by the Graduate Studies Committee, a candidate will be required to pass the Comprehensive evaluation.
- 4) Doctoral Dissertation – Within six months after successful completion of the Ph.D. Comprehensive Evaluation, doctoral students should submit to the Graduate Studies Committee, after consultation with the Graduate Program Director and their potential thesis supervisor, a thesis proposal not exceeding five pages. Before submission of the dissertation, candidates are normally required to spend time in Asia researching their project. Research leading to original scholarship is a prerequisite for the acceptance of a Ph.D. thesis.

### 25.6 Courses for Graduate Students (M.A. and Ph.D.)

Please consult the Department to see which courses are being given in any one academic year.

The course credit weight is given in parentheses (#) after the course title.

- 117-501A Advanced Topics in Japanese Studies I. (3)  
**117-502B ADVANCED TOPICS IN JAPANESE STUDIES II.** (3)  
**117-503A ADVANCED TOPICS IN CHINESE STUDIES I.** (3)  
**117-504B ADVANCED TOPICS IN CHINESE STUDIES II.** (3)  
**117-515A,B SEMINAR: BEYOND ORIENTALISM.** (3)  
**117-529A,B CONTEMPORARY CHINA: ANALYSIS OF CHANGE.** (3)  
**117-530D FOURTH LEVEL CHINESE.** (6)  
**117-537D CHINA TODAY THROUGH TRANSLATION.** (6)  
**117-540D FOURTH LEVEL JAPANESE.** (6)  
**117-543A,B CLASSICAL JAPANESE I.** (3)  
**117-544A,B CLASSICAL JAPANESE II.** (3)  
**117-547A,B ADVANCED READING AND TRANSLATION IN JAPANESE.** (3)  
**117-550A,B CLASSICAL CHINESE POETRY.** (3)  
**117-551A,B TECHNOLOGIES OF THE SELF IN EARLY CHINA.** (3)  
**117-559A,B ADVANCED TOPICS IN CHINESE LITERATURE.** (3)  
**117-562A,B JAPANESE LITERARY THEORY AND PRACTICE.** (3)  
**117-563A,B IMAGES, IDEOGRAMS, AESTHETICS.** (3)  
**117-564A,B STRUCTURES OF MODERNITY: JAPAN.** (3)  
**117-569A,B ADVANCED TOPICS IN JAPANESE LITERATURE.** (3)  
**117-580A,B JAPAN: THE SOCIOPOLITICAL FRAMEWORK.** (3)  
**117-584A,B INDUSTRY IN JAPAN.** (3)  
**117-590A,B MULTIPLE NARRATIVES OF THE "ORIENT".** (3)  
**117-600A,B EAST ASIAN STUDIES I.** (3)  
**117-601A,B EAST ASIAN STUDIES II.** (3)  
**117-651A,B SEMINAR IN TAOIST STUDIES I.** (3)  
**117-652A,B SEMINAR IN TAOIST STUDIES II.** (3)  
**117-653A,B CHINESE POPULAR CULTURE I.** (3)  
**117-654A,B CHINESE POPULAR CULTURE II.** (3)  
**117-655A,B PREMODERN CHINESE POETRY.** (3)  
**117-656A,B PREMODERN CHINESE NARRATIVE.** (3)  
**117-657A,B WOMEN'S WRITINGS IN TRADITIONAL CHINA.** (3)  
**117-660A,B SEMINAR: JAPANESE FICTION.** (3)  
**117-661A,B PREMODERN JAPANESE POETRY AND NARRATIVE.** (3)  
**117-662A,B SEMINAR: POPULAR CULTURE IN JAPAN.** (3)  
**117-663A,B SEMINAR: JAPANESE CULTURE AND THOUGHT.** (3)  
**117-680A,B SEMINAR: SOCIAL CHANGE IN JAPAN.** (3)  
**117-682A,B HEALTH AND WELFARE IN JAPAN.** (3)  
**117-690A,B THESIS RESEARCH I.** (3)  
**117-691A,B THESIS RESEARCH II.** (3)  
**117-692A,B THESIS RESEARCH III.** (3)  
**117-693A,B THESIS RESEARCH IV.** (3) (Awaiting University Approval)  
**117-694A,B THESIS RESEARCH V.** (3) (Awaiting University Approval)  
**117-695A,B THESIS RESEARCH VI.** (3) (Awaiting University Approval)  
**117-696D THESIS RESEARCH VII.** (6)  
**117-700D EAST ASIAN STUDIES III.** (6)  
**117-701D PH.D. COMPREHENSIVE.** (6)  
**117-750A,B CHINESE LITERARY THEORY AND CRITICISM.** (3)  
**117-780A,B SOCIAL STRATIFICATION IN JAPAN.** (3)

### Courses in other departments

#### Department of Anthropology

151-654A,B Anthropology of China. (3)

#### Department of History

101-611D Seminar in Traditional Chinese History. (6)  
 101-618A,B Readings in East Asian History. (3)

101-658D Seminar in Chinese History. (6)  
 101-668D Japanese Intellectual History. (6)

#### Department of Political Science

160-649A,B The Mass Approach to Political Development: China. (3)

#### Faculty of Management

270-625A,B Asia Pacific Management. (3)  
 272-685A,B Cross Cultural Management. (3)

#### Faculty of Religious Studies

260-546A,B Indian Philosophy. (3)  
 260-548A,B Indian Buddhist Metaphysics. (3)  
 260-549A,B Topics in East Asian Philosophy. (3) (Awaiting University Approval)  
 260-557A,B Asian Ethical Systems. (3)  
 260-651A,B Indian Buddhist Philosophy. (3)  
 260-653A,B Visistadvaita Vedanta. (3)  
 260-655A,B Buddhist Epistemology. (3)  
 260-658A,B Japanese Buddhist Philosophy. (3)  
 260-687A,B Research in Comparative Religions I. (3)

## 26 Economics

Department of Economics

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Chair — Christopher Green

### 26.1 Staff

#### Emeritus Professors

Earl F. Beach; B.A.(Queen's), A.M., Ph.D.(Harv.)  
 Irving Brecher; B.A.(McG.), M.S., Ph.D.(Harv.)  
 Kari Polanyi-Levitt; B.Sc.(Lond.), M.A.(Tor.)

#### Professors

Robert D. Cairns; B.Sc.(Tor.), Ph.D.(M.I.T.)  
 Antal Deutsch; B.Com.(Sir G. Wms.), Ph.D.(McG.) (*on leave 2000-01*)  
 Christopher Green; M.A.(Conn.), Ph.D.(Wis.)  
 Joseph Greenberg; B.A., M.A., Ph.D.(Heb. U. of Jer.)  
 Jagdish Handa; B.Sc.(Lond.), Ph.D.(Johns H.)  
 Ngo van Long; B.Ec.(LaT.), Ph.D.(A.N.U.)  
 Robin Thomas Naylor; B.A.(Tor.), M.Sc.(Lond.), Ph.D.(Cantab.)  
 J.C. Robin Rowley; B.Sc., M.Sc., Ph.D.(Lond.)

#### Associate Professors

Venkatesh Balasubramanian; B.A.(Delhi), M.B.A.(Indian Inst. of Mgmt), M.A., Ph.D.(C' nell)  
 Myron Frankman; B.Mgt.E.(Renss.), Ph.D.(Texas)  
 John Galbraith; B.A.(Queen's), M.Phil., D.Phil.(Oxon.)  
 George Grantham; B.A.(Antioch), M.A., Ph.D.(Yale)  
 Franque Grimard; B.A.(York), Ph.D.(Prin.) (*on leave 2000-01*)  
 John Iton; B.A.(McG.), Ph.D.(Johns H.)  
 C. John Kurien; B.A.(Kerala), M.A., Ph.D.(Vanderbilt)  
 Mary MacKinnon; B.A.(Queen's), M.Phil., D.Phil.(Oxon.)  
 Christopher T.S. Ragan; B.A.(Vic. B.C.), M.A.(Queen's), Ph.D.(M.I.T.)  
 Lee Soderstrom; B.A., Ph.D.(Calif.)  
 Thomas Velk; M.S., Ph.D.(Wis.)  
 Alexander Vicas; B.Com.(McG.), M.A., Ph.D.(Prin.)  
 William Watson; B.A.(McG.), Ph.D.(Yale)  
 Victoria Zinde-Walsh; M.A.(Wat.), M.Sc., Ph.D.(Moscow St.)

#### Assistant Professors

Suryapratim Banerjee; B. Stat., M. Stat., (Indian Inst. of Statistics, Calcutta, New Delhi), M.A., Ph.D.(Boston)

Curtis Eberwein; B.A., M.A.(U. of Akron), Ph.D.(Pitt.)  
Daniel Parent; B.A., M.A.(Laval), Ph.D.(Montr.)

*Postdoctoral Fellow*

Chris Minns; B.A.(Queen's), M.A.(Alta.), Ph.D.(Essex)

## 26.2 Programs Offered

M.A. in Economics, thesis and non-thesis options.  
Ph.D.

Because this Calendar is prepared early in the year, changes may take place after it has been printed. Students are advised to contact the Department Office for supplementary information which may be important to their choice of program.

## 26.3 Admission Requirements

An Honours B.A. in Economics is the normal requirement, although students holding an ordinary B.A., whether in economics or another discipline, may also be eligible for admission. Students judged by the admissions committee to have deficiencies in their preparation in economics may be admitted to a qualifying year in which they undertake advanced undergraduate work.

Students who have not previously passed a suitable course in statistics must take the undergraduate honours statistics course, Economics 154-257D. A course in the history of economic thought is also a prerequisite for a graduate degree in economics, and students who have not taken such a course will be required to take Economics 460A and 461B or 154-660A/B (the M.A. course in History of Economic Thought). Students are also expected to have completed or to complete three semesters of introductory calculus and at least one semester of linear algebra.

## 26.4 Application Procedures

Applications will be considered upon receipt of:

1. application form;
2. two copies of official transcripts sent by the university;
3. two letters of reference;
4. \$60 application fee.

Information and application form can be downloaded from McGill University, Economics Department. Website: <http://www.arts.mcgill.ca/programs/econ>. Hard copy of the application form is sent only upon request.

Deadline: February 1st for financial consideration.

## 26.5 Program Requirements

Lectures and examinations in the graduate program (M.A. and Ph.D.) in Economics are given in Macroeconomics, Microeconomics and several fields: Econometrics; Economic Development; Economic History; Industrial Organization; International Economics; Labour Economics; Monetary Economics; Public Finance; Mathematical Economics; Advanced Theory. Courses at the 600 level are usually taught in the first-term. Seminars/courses at the 700 level are offered in many of the fields listed above. They are generally given in the second term and normally have as a prerequisite the corresponding 600-level course.

### Requirements for the M.A. Degree (48 credits)

#### I. M.A. with Thesis:

The requirements for the Master's degree are:

1. Successful completion of the following courses with a grade in each of at least 65%;
  - 154-610A (3 credits) Microeconomic Theory I
  - 154-620A (3 credits) Macroeconomic Theory I

Twelve complementary credits which must include either 154-665A,B (Quantitative Methods) (3 credits) or 154-662D (Econometrics) (6 credits)

A minimum of 6 credits must be taken in the same field.
2. Completion of a Master's thesis, the subject of which must be approved by a thesis committee.

The total thesis program requirement is 48 credits (18 credits of course work and 30 credits for the thesis). An average grade of 70% in approved courses is needed for graduation.

Econometrics 154-662D or equivalent is strongly recommended but will not meet the 6 credit field requirement for the M.A.

#### II. M.A. with Research Paper:

1. Successful completion of the following courses with a grade in each of at least 65 per cent:

Six required credits:

- 154-610A (3 credits) Microeconomic Theory I
- 154-620A (3 credits) Macroeconomic Theory I

Eighteen complementary credits which must include either 154-665A,B (Quantitative Methods) (3 credits) or 154-662D (Econometrics) (6 credits)

A minimum of 6 credits must be taken in the same field.

2. A research paper of about 50 pages in length.

The total non-thesis program requirement is 48 credits (24 credits for course work and 24 credits for the research report). An average grade of 70% in approved courses is needed for graduation.

Econometrics 154-662D or equivalent is strongly recommended but will not meet the six credit field requirement for the M.A.

Residency requirement for the M.A. degree: Three full-terms for the M.A. degree one of which can be an approved summer term. Many students are able to complete the M.A. requirements in one calendar year.

#### Requirements for the Ph.D. Degree

The requirements for the doctoral degree are:

1. 18 credits in Economics beyond the M.A. requirements, including successful completion of the Econometrics course (662D) or its equivalent. Apart from 662 or equivalent, at least two of these courses must be in a single field.
2. Successful completion of the Ph.D. Written Comprehensive Examination.
3. A dissertation.
4. Three years of residence (credit for one year may be granted for master's work at McGill or for graduate study at another university).

**Ph.D. Comprehensive Examination.** This examination consists of written examinations in Macroeconomics, Microeconomics and two fields. A third field is also required, although this requirement is satisfied by successful completion of two half-year courses in that field.

**Doctoral Dissertations** Doctoral dissertations make original contributions to the literature. The topic must be approved by a two-person supervisory committee whose Chair is the student's Director of Research. The completed thesis must be approved by an external examiner as well as by two internal examiners before the student may defend the work at a formal oral examination.

## 26.6 Courses for Higher Degrees

- Denotes not offered in 2000-01.

The course credit weight is given in parentheses (#) after the course title.

**154-525B PROJECT ANALYSIS.** (3) (Open to advanced undergraduate students.) (Prerequisite: 154-250D, 154-352D or equivalent.) A course in cost benefit analysis for graduate and advanced undergraduate students. **Professor Cairns**

- **154-534B PENSION CRISIS.** (3)

**154-546A GAME THEORY.** (3) (Prerequisite: 154-230D or 154-250D) (Open to advanced undergraduate students.) This course introduces students to game theory, the branch of the social sciences that focuses on the formal modelling and analysis of human interactions and strategic behaviour. Basic concepts in

cooperative and non-cooperative games are applied to economic models. **Professor Banerjee**

**154-577A MATHEMATICAL ECONOMICS I.** (3) (Prerequisite: 189-301A/B or equivalent) A mathematical treatment of basic economic theory. **TBA**

● **154-578A,B MATHEMATICAL ECONOMICS II.** (3) (Prerequisite: 154-577A/B)

**154-602A,B ECONOMIC HISTORY.** (3) Selected topics in European and North-American economic history are investigated from the standpoint of the interplay of institutional change and quantitative growth. **Professor MacKinnon**

**154-610A MICROECONOMIC THEORY I.** (3) This is the first in a two-course sequence in microeconomics. **Professor Greenberg**

The core microeconomics sequence (610A, 611B) provides a rigorous coverage of the economic foundation upon which economic fields are built. Most of the sequence is devoted to building up this foundation of consumer and firm optimisation (including choice under uncertainty), partial and general equilibrium, and welfare economics. The remainder of 611B covers special topics that vary from year to year. These are likely to be drawn from the following: social choice; externalities and public goods; models of asymmetric information; the principal-agent framework; search; basic game theory.

**154-611B MICROECONOMIC THEORY II.** (3) This is the second in a two-course sequence in microeconomics. **Professor Long**

**154-620A MACROECONOMIC THEORY I.** (3) This course is the first in a two-course sequence in macroeconomics. The course offers a thorough treatment of the fundamentals of macroeconomic theory. Emphasis is placed on the construction of economic models with microeconomic foundations. Topics include market-clearing and non-market-clearing models, capital accumulation, business cycles, monetary policy and fiscal policy. **Professor Ragan**

**154-621B MACROECONOMIC THEORY II.** (3) This is the second in a two-course sequence in macroeconomics. The course provides an in-depth analysis of selected issues in macroeconomic theory, extending and complementing the coverage provided in 154-620A. **Professor Eberwein**

● **154-622,B PUBLIC FINANCE.** (3)

**154-623A MONEY AND BANKING.** (3) A rigorous analysis of the demand and supply of money and the role that it plays in the economy. Study of the ideas of the major schools of thought in monetary economics. **Professor Handa**

**154-624B INTERNATIONAL ECONOMICS.** (3) A detailed examination of theories and policies in international trade and finance. **Professor Long**

● **154-631A,B HISTORICAL EXPERIENCE OF ECONOMIC DEVELOPMENT.** (3)

**154-634B ECONOMIC DEVELOPMENT.** (3) A systematic treatment of the characteristics and problems of economic development in underdeveloped countries. **Professor Banerjee**

**154-637A INDUSTRIAL ORGANIZATION AND REGULATION.** (3) An analysis of the nature of the firm, industrial structure and the effect of structure on firm and industry behaviour and performance. **Professor Cairns**

**154-641B LABOUR ECONOMICS.** (3) A synthesis of theoretical developments in the area of labour economics with stress upon problems of empirical testing. **Professor Parent**

● **154-660B HISTORY OF ECONOMIC THOUGHT.** (3)

**154-662D ECONOMETRICS.** (6) A broad treatment of econometric methods, with particular reference to time series processes. Estimation of linear and non-linear models, GLS, IV, Maximum Likelihood, parametric specification testing for linear and non-linear hypotheses, diagnostic testing (autocorrelation, heteroskedasticity, normality, parameter constancy, etc.), modeling technique, non-stationary data processes. **Professors Galbraith and Zinde-Walsh**

**154-665B QUANTITATIVE METHODS.** (3) A survey of quantitative methods frequently used in economic research. Special emphasis will be placed upon the formulation and evaluation of econometric models. Illustrations will be drawn from the existing empirical literature in economics. Required for all Ph.D. students who have not taken Econometrics as a field. **Professor Galbraith**

**154-650A,B RESEARCH I.** (3) Preparation for work on M.A. thesis and M.A. research report.

**154-651A,B RESEARCH II.** (3) Same description as above.

**154-652A,B RESEARCH III.** (3) Same description as above.

**154-653A,B RESEARCH IV.** (3) Same description as above.

**154-670A,B THESIS I.** (6)

**154-671A,B THESIS II.** (6)

**154-672A,B THESIS III.** (6)

**154-680A,B M.A. REPORT I.** (3) The M.A. Report must demonstrate the candidate's ability to do independent work at the graduate level in a particular field of economics. While length will vary with the subject matter, it is expected that on average reports will be about 50 pages long. The Report will be graded jointly by two members of the Department. The supervisor will normally be one of the examiners.

**154-681A,B M.A. REPORT II.** (3) Same description as above.

**154-682A,B M.A. REPORT III.** (3) Same description as above.

**154-683A,B M.A. REPORT IV.** (3) Same description as above.

● **154-702A,B ECONOMIC HISTORY.** (3)

**154-705A,B READING COURSE ON SELECTED TOPICS IN ECONOMICS.** (3) Reading course in Economics. **Staff**

**154-706A,B SELECTED TOPICS.** (3) (Prerequisites: 154-610, 154-620 and 6 additional credits at the 600 level) Reading course in Economics. **Staff**

● **154-710B SELECTED TOPICS IN ECONOMICS.** (3)

● **154-712A,B PUBLIC FINANCE.** (3)

● **154-720A ADVANCED GAME THEORY.** (3)

**154-721B ADVANCED MONETARY THEORY.** (3) Selected topics in monetary theory, the theory of monetary policy, and the history of monetary institutions. **Professor Handa**

● **154-722B MACROECONOMICS.** (3)

**154-724A INTERNATIONAL ECONOMICS.** (3) Selected problems in international trade, foreign exchange and international movements of capital. **Professor Iton**

● **154-734B ECONOMIC DEVELOPMENT.** (3)

**154-737B INDUSTRIAL ORGANIZATION AND REGULATION.** (3) Builds on material covered in 154-637A. Problems are examined in greater depth with specific topics varying from year to year. **Professor Cairns**

● **154-741B ADVANCED LABOUR ECONOMICS.** (3)

● **154-742B EMPIRICAL MICROECONOMICS.** (3) (Prerequisite: First term of 662D and either 634A or 641A, or consent of the instructor.)

**154-744B HEALTH ECONOMICS.** (3) The emphasis will be on describing and analyzing the structure and performance of the Canadian health system, though some attention will be given to recent attempts by the federal and provincial governments to deal with current problems in this field. Readings will be selected from the economics and health literature. **Professor Soderstrom**

● **154-750A SELECTED TOPICS IN MICROECONOMICS.** (3)

● **154-751A SELECTED TOPICS IN MACROECONOMICS.** (3)

**154-752B TOPICS IN FINANCIAL ECONOMICS.** (3) Selected topics in monetary economics and international finance for advanced graduate work in this area. **Professor Bala**

● **154-753A SELECTED TOPICS IN MATHEMATICAL ECONOMICS.** (3)

● **154-760B HISTORY OF ECONOMIC THOUGHT.** (3)

● **154-761A ECONOMETRICS – TIME SERIES ANALYSIS.** (3) (Not open to students who have taken 154-762D.)

**154-762B ECONOMETRICS – ASYMPTOTIC AND FINITE – SAMPLE THEORY.** (3) Exact and asymptotic distribution theory in econometrics: basic results for estimation and inference in regression models, extensions and other selected topics including nonparametric and distribution-free methods for econometric models.

**Professor Zinde-Walsh**

**154-763A FINANCIAL ECONOMETRICS.** (3) This course covers advanced time series methods used in the analysis of financial data and other potentially non-stationary time series. Topics: integrated time series, co-integration, unit root testing, conditional heteroscedasticity, long memory, non-parametric and neural network models. Applications include market efficiency, stochastic volatility and predictability of asset returns. **Professor Galbraith**

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## 27 Educational and Counselling Psychology

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