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Academic Calendar 2006 - 2007

Summer Term 2006

Summer Registration	*Consult Graduate Program Director for exact dates of registration and for academic advice.*
Monday, May 8	First term and two-term Summer session begins
Monday, May 15	Last day to add two-term and first term Summer session courses
Monday, May 15	DNE deadline for withdrawal with tuition refund from two-term and first term Summer session courses
Monday, May 22	Victoria Day, University closed
Monday, June 5	Academic deadline for withdrawal from first-term Summer session courses (/1 DISC)
Monday, June 12	**Spring Convocation,** Arts & Science
Tuesday, June 13	**Spring Convocation,** John Molson School of Business and Engineering & Computer Science
Wednesday, June 14	**Spring Convocation,** Fine Arts
Thursday, June 15	Last day to apply for re-evaluation of courses ending in April 2006
Wednesday, June 21	Last day of classes for first term Summer session
Saturday, June 24	Fête Nationale, University closed
Saturday, July 1	Canada Day, University closed
Monday, July 3	Classes begin second term Summer session
Monday, July 10	Last day to add second term Summer session courses
Monday, July 10	DNE deadline for withdrawal with tuition refund from second-term Summer session courses
Saturday, July 15	Last day for students to apply for Fall Convocation
Wednesday, July 26	Academic deadline for withdrawal from second-term Summer session courses (/1 DISC)
Tuesday, August 1	Last day for International students to change their immigration status to Permanent Resident for the Summer term 2006 and to apply for a possible refund
Friday, August 4	Last day for doctoral thesis submission to the Thesis Office for students who have applied for Fall Convocation
Thursday, August 17	Last day of classes for two term and second term Summer session
Friday, August 18	Last day for master's thesis submission to the Thesis Office for students who have applied for Fall Convocation

Academic Calendar

Fall Term 2006

Fall/Winter Registration	*Consult Graduate Program Director for exact dates of registration and for academic advice.*
Monday, September 4	Labour Day, University closed
Tuesday, September 5	Classes begin Late registration and course change period begins Students incur a late registration fee when they register on or after the date that classes officially begin across the University Opt-out period for GSA Health Insurance fee begins (Sept. 5 to Sept. 19)
Friday, September 15	**Final** submission date of theses (including all required modifications) for students who have applied for Fall Convocation
Tuesday, September 19	Last day to add a course for Fall term (/2 courses) or for Fall-Winter term (/3 courses)
Tuesday, September 19	DNE deadline for withdrawal from Fall 2006 (/2 courses) and Fall 2006/Winter 2007 (/3 courses)
Saturday, September 30	Deadline date to apply for Concordia Partial Tuition Scholarships for International students
Sunday, October 1	Last day to apply for re-evaluation of courses ending in August 2006
Monday, October 9	Thanksgiving Day, University closed
Wednesday, October 11	Deadline date to apply for NSERC Scholarships (2007/2008 competition)
Thursday, October 12	Deadline date to apply for Fonds FQRNT/FQRSC (2007/2008 competition)
Sunday, October 15	Deadline date to apply for Fonds FRSQ (2007/2008 competition)
Wednesday, October 25	Deadline date to apply for SSHRC Fellowships (2007/2008 competition)
Tuesday, October 31	Academic deadline for withdrawal from Fall 2006 courses (/2 DISC)
TBA	**Fall Convocation**
Friday, December 1	Last day for International students to change their immigration status to Permanent Resident for the Fall term 2006 and to apply for a possible refund
Monday, December 4	Last day of classes, Fall term courses

Wednesday, December 6	National Day of Remembrance and Action on Violence Against Women - University will remain open
Friday, December 15	Last day to apply for Concordia University Graduate Fellowships/International Tuition Fee Remission Awards **Note:** The Fellowship deadline for graduate programs in Psychology is January 3; the fellowship deadline for the MFA is February 1

Winter Term 2007

Winter Registration	*Consult Graduate Program Director for exact dates of registration and for academic advice.*
Wednesday, January 3	Classes begin for Winter term courses Late registration and course change period begins Students incur a late registration fee when they register on or after the date that classes officially begin across the University Opt-out period for GSA Health Insurance fee begins (Jan. 3 to Jan. 17)
Monday, January 15	Last day for students to apply for Spring Convocation
Wednesday, January 17	Last day to add a course for Winter term (/4 courses)
Wednesday, January 17	DNE deadline for withdrawal from Winter 2006 (/4 courses)
Thursday, February 1	Last day to apply for re-evaluation of courses ending in December 2006
Monday, February 19	Mid-term break begins
Friday, February 23	Mid-term break ends President's Holiday, University closed
Monday, March 5	Last day for doctoral thesis submission to the Thesis Office for students who have applied for Spring Convocation
Wednesday, March 7	Academic withdrawal deadline for Winter one-term (/4 DISC) and two-term courses (/3 DISC)
Monday, March 19	Last day for master's thesis submission to the Thesis Office for students who have applied for Spring Convocation

Academic Calendar

Saturday, April 1	Last day for International students to change their immigration status to Permanent Resident for the Winter term 2007 and to apply for a possible refund
Friday, April 6	University closed
Monday, April 9	University closed
Tuesday, April 10	Last day to apply for the Harriet and Abe Gold Entrance Bursaries, the Archambault/Desmarais/ Power Corporation Fellowships and the Campaign for Concordia & Hydro Quebec Awards
Tuesday, April 10	Last day of classes, Winter term
Monday, April 16	**Final** submission date of theses (including all required modifications) for students who have applied for Spring Convocation

Message from the Dean of Graduate Studies

Welcome to Graduate Studies at Concordia University where close to 6,000 graduate students conduct research and creative work, contributing to their professions at advanced levels. Graduate programs at Concordia number more than 100, providing both a rich tradition and innovation in the arts; commerce and administration; humanities; applied, natural, physical and social sciences; technology; and interdisciplinary studies within departments and in cross-university programs.

Concordia was formed in 1974 from two parent institutions: Loyola with a traditional Oxford style campus and Sir George Williams in the centre of downtown Montreal. As one of the newer universities in Canada, Concordia fosters its creative and innovative spirit thriving on the city's multicultural mix and the many historical, cultural and scientific organizations with which researchers at Concordia collaborate.

The School of Graduate Studies works collaboratively with the Faculties of Arts and Science, Fine Arts, Engineering and Computer Science and the John Molson School of Business fulfilling the mission to provide the highest quality and most enlightened and inclusive graduate education preparing generations of researchers and professionals to meet the local, regional and international challenges we all face in the future.

Dr. Elizabeth Saccà
Dean of Graduate Studies

The University

Concordia University is an English-language university located in the city of Montreal, the second largest French-speaking city in the world. Montreal is located on an island in the heart of the St. Lawrence Valley. It dates back to the 17th century and is built around a mountain in the centre of the island known as *Mont-Royal*. The city is within an hour's drive of the states of New York and Vermont in the U.S.A., and within an hour's drive of a myriad of lakes and ski resorts in the Laurentian mountains and the Eastern Townships.

Few cities are as exciting and multi-dimensional as Montreal. As one of the great cities of the world, it has a famous hockey team, a National League baseball team, world class art galleries, an excellent metro system and some of the finest shops this side of the Atlantic. Montreal is a major financial, business, and industrial centre. It is also a "Cité Universitaire" par excellence. The four universities and affiliated schools and the numerous colleges scattered throughout the city make Montreal a world centre of higher learning and an attractive city for major research oriented companies. Montreal is, for example, the centre of the Canadian aerospace industry.

The University has two campuses: the Sir George Williams Campus in the heart of the city, and the Loyola Campus, nestled in a tranquil setting near Montreal West. Our graduate programs are offered on both campuses. The two campuses are connected by the door-to-door shuttle bus service operated by the university, and by the bus and metro system of the city of Montreal.

The academic units of the University are grouped into the Faculties of Arts and Science, Engineering and Computer Science, Fine Arts, the John Molson School of Business and the School of Graduate Studies. The School is an umbrella structure which is responsible for the graduate programs of the University and for the students enrolled in these programs.

Concordia has about 25,000 undergraduate and 6,000 graduate students who come from all walks of life and from all over the world. History has endowed the university with a special mission in this bilingual and multicultural environment: the university provides one of the main academic and cultural windows between the two linguistic traditions of Canada.

Concordia has a graduate program repertoire and the academic climate that suit diverse academic interests and ambitions. The University is solidly integrated into the network of Montreal universities. Many of our professors collaborate with their colleagues at the Université de Montréal, Université du Québec and the Universities of Sherbrooke and Laval, and with professors at McGill, the other English-language university of Montreal. Our students benefit from these links. At the graduate level there are formal alliances

between the Montreal universities through the joint Ph.D. programs in Administration, Art History, Communication, and Religion. Other such joint ventures are under development.

The interaction between the City of Montreal, the business community, and the universities is excellent. The Chambre de commerce awards a *Prix d'excellence* for the best Ph.D. thesis in Natural Science and Engineering, Humanities and Health Science written by a student at Concordia, McGill, Université de Montréal, Université du Québec à Montréal, l'École des Hautes Études Commerciales, or l'École Polytechnique. The winners, who are chosen by a jury which includes the Deans of Graduate Studies of the four Montreal universities, become members of the distinguished group of *grands montréalais.*

Facilities for Advanced Study and Research

Libraries

Concordia University has two libraries, the R. Howard Webster Library on the downtown Sir George Williams campus and the Georges P. Vanier Library on the west-end Loyola Campus. Both libraries offer the same services, however, their collections differ to support the programs and courses offered on the respective campuses. Electronic collections are accessible from either library and remotely via the Internet.

CLUES, the library catalogue, provides location and status information for the entire collection including books, journals, audio-visual material and links to items in electronic format. The Libraries also subscribe to databases, which provide bibliographic references to the literature in subject areas, as well as full-text access to articles and data. RefWorks, a bibliographic management utility, is also available to students.

Workstations within the Libraries are available to students for academic use and provide access to electronic collections, the Internet, word processing, spreadsheet and presentation software. In addition, laptops with wireless Internet access may be borrowed for a two-hour loan period.

Assistance and guidance in finding materials for research projects may be obtained at the reference desks, via email, through online chat or in consultation with the subject librarian for a particular discipline. Research Guides by Subject as well as an online tutorial are available on the Libraries' website. General and specific workshops are offered each term, some geared specifically to the needs of graduate students.

Graduate students may borrow books for a six-week period. Students in master, doctoral or eligible diploma programs may borrow from other Canadian university libraries with a CREPUQ card that may be obtained at either

Concordia library Circulation Desk. In addition, the Libraries' interlibrary loan service provides document delivery and borrowing of materials from other libraries, at the local, national or international level. Graduate students may also reserve a study space or carrel in the Vanier or the Webster Library.

Additional information concerning the Libraries' collections and services is made available in print format in the libraries and on their website at http://library.concordia.ca

Instructional and Informational Technology Services (IITS)

Instructional and Information Technology Services (IITS) provides infrastructural services in the areas of computing, voice and data communications, systems, instructional technology and media development. The department administers hardware, software, information, consulting and professional support to faculty, students, staff and researchers in using instructional technology in their programs/projects/curricula on both campuses.

The Student/Faculty Portal
Developed by IITS this on-line web tool allows students to register for courses, and view personalized class schedules, billing and account information, student records, current grades, examination schedules and information regarding loans and bursaries. New features are continually being added.

Classroom Technology Support
IITS provides classroom technology support for all aspects of the university's high-tech classrooms which are equipped with presentation technology equipment in consoles and wireless networking. Students and faculty may reserve these equipped rooms and any additional equipment through the IITS Equipment Depots. Training and assistance are available from the Depot staff.

Wireless Network
The Concordia Wireless Network service is designed to provide access into the Concordia network from classrooms, both libraries (Vanier and Webster), and public areas on both campuses. Common uses for the Wireless Network include academic research, viewing course websites, and casual computing such as checking e-mails. There are over 150 Access Points set up throughout both campuses.

Site Generator
IITS provides support to faculty who wish to create websites for their courses and lectures by using Site Generator. Created here at Concordia, Site Generator is an exceptional educational tool. It is a do-it-yourself website building tool that has proven itself to be a tremendously effective 24/7 on-line professor's assistant.

Computer Labs
Several computer labs are operated by IITS for faculty and graduate student research on both IBM and Mac platforms. They offer a wide range of traditional computer languages, general purpose application packages and specialized software.

Training Workshops
The objective of IITS' training program is to enhance the computing skills of students, staff and faculty, by presenting workshops on software supported and most frequently used at the University.

Research Centres

Modern research is often a team process which is facilitated by the complementary activities of a coordinated group. Such groups are composed of several senior researchers who bring unique approaches to their common problems, numerous interacting graduate students and post-doctoral researchers, as well as professional and technical support teams for the research. These elements combine to form a research centre which offers an environment richer than the simple sum of its parts. At Concordia, the Senate and Board of Governors of the University have given priority and active support to research in a number of designated areas through the recognition of University research centres.

The University and Faculty research centres consist of groups of nationally and internationally recognized research faculty who have an established record of performance. They are organized around major themes of interest to their disciplines and provide an important service to the community. Often, the centres offer an academically rich environment for graduate students.

Research centres are a part of Concordia's research and graduate programs over a very wide range of disciplines from the humanities to engineering. A few examples will serve to sketch the role of these centres in the academic life of the University.

Applied Psychology Centre (APC)
The Applied Psychology Centre (APC) provides graduate students in the clinical training program with comprehensive practicum training in psychological assessment and psychotherapy. Clients at the APC are seen by graduate students under the supervision of clinical faculty. The types of services offered by the APC reflect the interests of clinical supervisors and students, and may include individual, family, or marital psychotherapy, cognitive-behaviour therapy for anxiety or stress, and treatment of child disorders.

Inter-University Centre for Algebraic Computation (CICMA)
CICMA is an inter-university research centre officially established in 1989, and now one of the Centre de Recherche Mathématiques (CRM) ´s eight laboratories. The Centre consists of researchers from Concordia, Laval, McGill, Montreal and Ottawa Universities. CICMA's research activities are concentrated on number theory and arithmetic geometry. Other areas of interest include algebraic geometry, group theory and moonshine.

These examples are representative of the vitality of coordinated and focused research efforts across the spectrum of Concordia's graduate programs. The research centres are an important resource for graduate students.

Centre for Building Studies (CBS)
The Centre for Building Studies is a unique research centre which gathers members of a full range of engineering disciplines who share a common interest to carry out research to contribute in the building construction industry and whose concerted actions lead to the optimization of building products, processes and performance, culminating in definitions for buildings of the future. Through its programs in research and technology transfer, and through involvement of its personnel in community, industry, and government agencies, the Centre for Building Studies has become the only university-based focal point for Building Engineering research in Canada and one of the very few in North America.

Centre for Canadian Irish Studies
The Centre for Canadian Irish Studies was created in 2000 through the joint financial support of Concordia University and the Canadian Irish Studies Foundation. Its mandate is to promote a fuller understanding of Ireland and the Irish experience in Canada; it does so by coordinating multidisciplinary programs in Canadian Irish Studies, organizing an Irish Public Lectures Series and providing scholarships to undergraduate and graduate students. The Centre offers a point of convergence for a group of researchers, all with an interest in Irish Studies, from various disciplinary perspectives, but all with a focus on the interplay between Ireland and Quebec. This group is currently identifying "axes de recherche" dealing with comparative thematic aspects of the Irish and Quebec experiences. The Centre serves as a communication hub for Montreal's Irish community with which it maintains close ongoing contact.

Centre for Human Relations and Community Studies
The Centre is associated with the Department of Applied Human Sciences and is engaged in action research, consultation, and training. Since its inception in 1963, the Centre has worked with hundreds of organizations, community groups, and agencies. The Centre also sponsors Canada's most well-established Trainer Development Programme, with the goal of assisting individuals to develop skills in experience-based approaches to learning.

Centre for Industrial Control
The centre's mandate is to pursue excellence in industrial control and automation through education, research and active interaction with industry. Research at the centre ranges from fundamental studies, formulation of advanced methodologies to solve specific problems or classes of problems, to full-scale development of working prototypes suitable for evaluation under realistic conditions. The funding of this Centre is derived from a good mix of federal and provincial research granting agencies, governmental departments or ministries, and research contracts from individual industry.

Centre for Pattern Recognition and Machine Intelligence (CENPARMI) consists of more than 15 researchers, and 60 staff and graduate students. Its objectives are to undertake scientific and high-technology projects in both academic and industrial sectors. Its reputation is built on the use of computers to recognize digitized patterns such as characters, documents, faces, fingerprints, machine parts, and engineering drawings. CENPARMI is internationally known for its advanced research in applying practical AI and knowledge-based techniques to solve problems.

The Centre for Research in Human Development (CRDH) is an internationally recognized research and training centre, with central facilities housed at Concordia University. The Centre is a multi-disciplinary and multi-institutional organization with a membership of 35 faculty researchers and over 100 graduate and post-doctoral trainees, from 7 disciplines at 5 universities and colleges across Quebec (Concordia, UQAM, McGill, Université Laval, College de Maisonneuve). The Centre and its members are committed to advancing the understanding and support of human growth and development from birth through old age. Using a model that focuses on key transitions in the human life cycle, CRDH serves as a centre for advanced research training, collaboration, and cross-disciplinary work. The research programs at CRDH focus on problems such as the maintenance of competence in old age, the transition from adolescence to adulthood, the challenging demands of young children's transition to formal schooling, and the factors associated with successful adaptation to children's initial entry into society during the first years of life.

Centre for Research in Molecular Modeling (CERMM)
Computational and theoretical chemistry has been widely recognized as a growing and indispensable branch of science in the past decade. The mission of CERMM is to promote excellence in research and graduate education in computational chemistry and biochemistry, to foster collaborations between researchers in different institutions, and to provide an interdisciplinary forum for experimentalists, modelers and theoreticians to combine their expertise to reach new frontiers in the molecular sciences.

Centre for Structural and Functional Genomics (CSFG)
The emergence of genomics and bioinformatics has revolutionized the way the pharmaceutical and agricultural industries conduct research and development. The CSFG comprises of a dynamic, multi-disciplinary team of people, including biologists, biochemists and bioinformaticians. With the help of a $3 million CFI grant, a state-of-the-art core genomics facility has been assembled along with the computational resources necessary to sequence, process and store the genetic information of various organisms.

Centre for the Study of Learning and Performance (CSLP)
The Centre for the Study of Learning and Performance (CSLP) is a research centre consisting of over 50 principal members, research collaborators and/or associates, 16 support staff, and over 40 graduate students. Researchers are from Concordia (Education, Psychology, Applied Linguistics), McGill, Université de Montréal, UQAM, Bishop's, Louisiana State, Johns Hopkins, and McMaster universities, and at CEGEP Montmorency and Vanier and Dawson Colleges. The CSLP has led a variety of innovative research and development projects, involving hundreds of students from elementary, secondary and postsecondary educational institutions.

Centre for Studies in Behavioral Neurobiology (CSBN)
The Centre for Studies in Behavioral Neurobiology (CSBN) brings together the talents of diverse researchers interested in the fundamental brain mechanisms underlying motivation and learning. This group has achieved an international reputation for its work on the biological bases of drug dependence. The research is clustered around three principal themes: reward, motivation, and plasticity. These themes are explored using methods and approaches drawn from many disciplines including experimental psychology, behavioral decision theory, neurophysiology, neuropharmacology, neuroanatomy, neuroendocrinology, and molecular neuroscience.

Centre for the Arts and Human Development
The Centre for the Arts in Human Development is an effective practicum training site for creative arts therapies graduate students. They receive on-site supervision from faculty and participate in a multidisciplinary creative arts program, which integrates dance-movement, music, art and drama therapies in providing services for clients of the West Island Readaptation Centre.

Concordia Centre for Advanced Vehicle Engineering (CONCAVE)
It is a key university centre for the Montreal area providing leadership in the transportation industry. Along with world-class faculty and students we insist on putting the student close to faculty, staff and industry. CONCAVE is as much an environment as it is a research centre. The centre focuses on achieving the synergy of ideas and people to learn how to research, to solve, to apply, and ultimately create. Students regularly win top engineering employment

placement. Our CONCAVE faculty members are a group of world-recognized experts in vehicle engineering, vibration, sound, acoustics, and MEMS.

Concordia Centre for Broadcasting Studies (CBS)
The research centre for Canadian radio and television studies contains the following archives and texts:

- the CBC Radio-Drama Archives; 16,000 m.s. radio-drama scripts and an equivalent amount of m.s. background documents from the CBC, CRBC and CNR Radio Department, from 1927 to the present (the official repository of CBC radio-drama documents, ongoing); access through a descriptive Bibliography and Union Catalogue;
- sixteen personal manuscript collections of people involved in broadcasting; a number in radio drama, but a representative selection from all aspects of broadcasting; also indexed; and
- The most complete collection of Canadian bibliographies of broadcasting schedules in the country, 1927 to the present - many unavailable elsewhere.

Concordia Centre for Composites (CONCOM)
The mission of CONCOM is to attain world class excellence in research, training and industrial development activities in composites. The emphasis is on the research and development of low-cost high- volume polymer matrix composite structures. At the same time, fundamental work in metal matrix and ceramic matrix composites also is carried out. Current emphasis is on the development of polymer nanocomposites and long fiber thermoplastic composites. The Center consists of seven faculty members from Mechanical and Industrial Engineering, Electrical and Computer Engineering and Building, Civil and Environmental Engineering. The Center has carried out projects on composites for companies in the aerospace, automotive, chemical processing, sports, marine and biomedical areas. The Center has membership in many national and provincial network such as ISIS, AUTO 21, CREPEC, CRIAQ, and NANO QUEBEC.

Concordia Centre for Cosmopolitan Studies
The Concordia Centre for Cosmopolitan Studies exists to explore the implications and the possibilities of Cosmopolitanism, compassing the complexity of global social and cultural milieux, the experience of the individual citizen, and the openness of a just society. The Centre promotes an egalitarian, existentially sensitive, social science, aimed at placing individual experience at the centre of an appreciation of complex, increasingly global, social and cultural milieux, for the purpose of adumbrating the ethical space of the citizen in a just, plural society.

Concordia Centre for Small Business and Entrepreneurial Studies (CSBES)
In keeping with Concordia's reputation for sensitivity to the needs of the community, the Centre for Small Business and Entrepreneurial Studies (CSBES) was established in 1984. Its mission is threefold:

- To develop and conduct both undergraduate and graduate level courses as well as training programs designed to prepare individuals for an entrepreneurial career,
- To sponsor and promote research geared to the needs of small businesses, and
- To provide support to Montreal entrepreneurs, small businesses, NGOs and entrepreneurial and small business associations.

CSBES provides consulting and training to entrepreneurs through the Small Business Consulting Bureau, the Entrepreneurship Training Institute, and the Dobson Mentorship Program for Knowledge-based Entrepreneurs.

Concordia Institute for Aerospace Design and Innovation (CIADI)
The objectives of the Concordia Institute of Aerospace Design and Innovation (CIADI) are to promote awareness and provide leading edge know-how among engineering students in aerospace design and innovation, with emphasis on its multidisciplinary nature and evolving technologies. The Institute provides, through some preliminary industry research projects, "an initiation to research" for some students who want to pursue graduate studies in aerospace, as part of the Consortium de recherche et d'innovation en aérospatiale au Québec (CRIAQ).

Concordia Institute for Canadian Jewish Studies
The Concordia University Chair in Canadian Jewish Studies is dedicated to the study of the Canadian Jewish experience. Through research and education, the Chair supports a wide range of projects of local, national, and international interest, which contribute to this growing field of inquiry. Together with the Concordia University Institute for Canadian Jewish Studies, the Chair provides a bridge between the academic study of Canadian Jewry and the community in which it serves. The Chair, responsible for the academic study of Canadian Jewry, and the Institute, responsible for community activities, represent an unprecedented partnership.

Concordia Institute for Information Systems Engineering (CIISE)
The CIISE is an interdisciplinary fundamental research, R & D learning institute, housing state-of-the-art research in innovative applications of information systems to a wide range of areas, among them: system engineering, information systems security, high-quality system engineering, communication software engineering, bioinformatics, embedded systems engineering, electronics, multimedia, aerospace, finance and banking, automotive, manufacturing and building and construction management. The Concordia Institute for Information Systems Engineering offers only graduate programs.

Entrepreneurship Institute for the Development of Minority Communities (EIDMC) provides opportunities for members of minority communities to acquire the knowledge and skills necessary to better their situation and thus improve

the economic and social conditions in their communities. The Institute achieves its mission by developing, promoting and delivering non-credit courses and Certificate programs as well as customized courses that will assist aspiring business persons, professionals and leaders from minority communities in becoming successful entrepreneurs and decision makers.

Goodman Institute of Investment Management
The Goodman Institute, through the John Molson School of Business at Concordia University, offers the world's only MBA program that fully integrates the Chartered Financial Analyst® (CFA) Body of Knowledge into its curriculum. Our program prepares students to write all three levels of the CFA exams. It is currently available in both Toronto and Montreal and is expected to be offered in Shanghai commencing in 2006. Courses are taught Monday and Wednesday evenings as well as Saturdays in order to accommodate students' work schedules.

Institute for Research/Creation in Media Arts and Technologies (Hexagram)
Hexagram is the first Canadian university institute committed to research and creation in media arts. It brings together more than sixty-five university-affiliated artists/researchers with access to a pool of over 300 graduate students, working in synergy to position Montreal at the cutting edge of research in media arts and technology. This is an exciting challenge for Hexagram. In this role it will act as a facilitator and catalyst for media arts through mobilization, transfer and commercialization activities.

The International Centre for Aviation Management Education and Research (ICAMER) was established in July 2001 with the objective to promote a greater exchange of ideas and encourage advances in the field of aviation management education by establishing industry partnerships, developing new industry-specific pedagogical materials and promoting academic exchange through associations, academic journals and conferences.

The Gail and Stephen A. Jarislowsky Institute for Studies in Canadian Art seeks to advance the greater appreciation and richer understanding of Canadian visual culture of all eras. To accomplish this goal, the Institute maintains a broad and ongoing dialogue within the academic and museum communities on the evolving nature of studies in the visual arts in Canada. The Institute supports pedagogical activities and research on Canadian art by means of a wide range of activities. These embrace scholarly publications, projects employing electronic and image-based technologies, public conferences and events of interest to the national and international art community.

Karl Polanyi Institute of Political Economy was established in 1988 in response to the growing recognition of the relevance of Karl Polanyi's work to contemporary society. A social and economic historian, and political commentator, Karl Polanyi (1886-1964) is considered one of the most

important contributors to the social sciences in the 20th century along with writers such as Max Weber, John Maynard Keynes, Joseph Schumpeter, and Gunnar Myrdal.

The mission of the Institute is two-fold: to preserve the intellectual legacy of Karl Polanyi and to encourage new intellectual work and new dialogue inspired by that legacy. The centerpiece of the Karl Polanyi Institute is the **Karl Polanyi Archive**. This rich and vast collection of material includes unpublished papers, drafts of manuscripts (published and unpublished), lecture notes and outlines, published articles, correspondence, outlines of projected books and notes by Karl Polanyi, papers by others (many of Karl Polanyi's students) and memorabilia. The Institute welcomes scholars, researchers and students who wish to examine the collection. The Institute is currently in the process of digitizing the entire Polanyi Archive collection.
For more information, please consult the Polanyi Institute web site:
http://artsandscience.concordia.ca/polanyi/

Montreal Institute for Genocide Studies (MIGS)
The Montreal Institute for Genocide and Human Rights Studies (MIGS) was founded in 1986, based in the departments of History and Sociology/Anthropology at Concordia University. In recent years, Concordia faculty members and graduate students from Communications, English, Geography, and Political Science have joined in its work, as have colleagues from McGill and the University of Quebec in Montreal. MIGS seeks to encourage research by offering its resources and its hospitality to Concordia students and faculty, as well as post-doctoral fellows and colleagues visiting from other universities and research centres. For more information see http://MIGS.concordia.ca.

These examples are representative of the vitality of coordinated and focused research efforts across the spectrum of Concordia's graduate programs. The research centres are an important resource for graduate students.

University Archives

The University Archives is the official repository for the documents of Concordia University and of its two founding institutions, Loyola College and Sir George Williams University. The collection of institutional material includes official records of the University, publications, plans, photographs, audio/visual materials, and a small collection of artifacts. The Archives also has private papers of faculty and staff members and other collections relating to the institution or people/activities connected with it.

The Concordia Archives also collects private papers to support the research activities of the academic programs of the University. Some of the areas of

specialization are: Montreal Jazz History, the Visual Art Community of Montreal, the Montreal Irish community, and Continuing Education.
The Archives is open between 9:00 a.m. and 4:30 p.m. Monday through Friday, but is closed in the summer on Friday afternoons.

Centre for International Academic Cooperation

Concordia is a university which is responsive to the needs of a diverse student and faculty population, whose international aspirations are situated in a dynamic and evolving multilingual and multicultural environment. Concordia is an international institution in the very real sense of the word. In pursing an enlightened program of research and teaching, it is imperative to extol the virtues of an international university actively seeking, encouraging and participating in the development of new ideas from abroad.

Concordia University has established the **Centre for International Academic Cooperation (CIAC)** which facilitates, coordinates and monitors the University's international activities and student exchange programs.

The Alumni Association

The **Concordia University Alumni Association** (CUAA) represents the more - than 100,000 worldwide alumni of Concordia University and its founding institutions, Sir George Williams University and Loyola College. All graduates are lifetime members of the CUAA, created in 1983 to provide a link for alumni to the University and to each other, and to promote Concordia University as an institution of higher learning. Outside of Montreal there are active alumni chapters in Quebec City, Ottawa, Toronto, Calgary, Edmonton, Vancouver and Victoria, and in Boston, the New York City region, London, Trinidad & Tobago and Hong Kong.

To achieve its goals, the CUAA, working with Concordia's Office of Alumni Affairs, provides alumni with a wide variety of programs and services. The Mentor Program matches students with alumni to help students formulate career goals. C*A*S*T (Concordia Alumni Student Team) helps connect students to other students, prospective students, alumni and the University. Through the correspondence Program, alumni can find lost friends or classmates. Email Forwarding for Life (EFL) is designed to conveniently help people stay in touch with colleagues, friends and family by providing a permanent email alias from Concordia University. The yearly Homecoming brings back graduates of Concordia, Sir George and Loyola to visit old haunts, meet former classmates, join in class and other reunions, watch the Homecoming football Game and enjoy the President's Dinner. The Annual Alumni Recognition Awards honours outstanding alumni volunteers, students and teachers. *Concordia University Magazine,* a quarterly publication, is the only University publication sent to all graduates of Concordia and its founding institutions. It seeks to pique the

interest of its readers and to keep them informed about Concordia and its alumni. The CUAA, *Calendar of Events*, is produced throughout the year and mailed to all alumni in the greater Montreal area to publicize seminars, workshops and activities. Alumni in the greater Toronto and National Capital Region areas receive biannual newsletters. The new Alma Matters newsletter provides updates and further information on alumni activity. The Gold Alumni ID Card, for $35 a year, provides additional benefits and services to alumni, including access to many Concordia facilities and services, car rental and fitness club discounts, and more. For more information please contact the Office of Alumni Affairs, 1463 Bishop St. Rm. BC-101, (514) 848-2424 ext. 3818, fax (514) 848-3826, e-mail alumni@coral.concordia.ca, or visit the CUAA online: http://alumni.concordia.ca/

Degree Nomenclature

In February 1992, Concordia University adopted a policy on degree nomenclature that seeks to provide students with the opportunity to graduate with gender neutral degree titles. This policy stipulates that students are entitled to receive their degrees in either the traditional or new degree nomenclature. The new names for degrees are: Baccalaureate, Magisteriate, and Doctorate. The traditional nomenclature is: Bachelor, Master, and Doctor.

The decision to implement new titles arose from the belief that some of the structures that presently exist at Concordia and other universities reflect a period when women were not accepted as full participants in the academic community. The University felt it was time to offer degree titles that do not refer explicitly or implicitly only to men.

Students may choose to graduate with degree titles that are gender neutral and refer to the diplomas themselves. Graduates who have previously been awarded a Concordia degree will be able to request that their degree be re-issued in the new nomenclature.

Convocation

Degrees are awarded at the Spring Convocation in June and the Fall Convocation in November. Degree, diploma and certificate candidates who expect to complete their program requirements in a particular term, must submit an application to graduate. Forms are available from the Birks Student Service Centre. The forms must be completed by January 15 for June graduation and by July 15 for November graduation. In programs requiring a thesis at the master or doctoral level, there are deadline dates for thesis submission which must be met if a student is to graduate at a particular graduation. (Students should check with the Thesis Office for exact dates).

The Ceremony

At the Convocation ceremony, bachelor candidates are awarded their degrees first, followed by diploma candidates, master's candidates, and finally doctoral candidates. Wearing black gowns and the appropriate hoods, all bachelor degree candidates are symbolically capped on stage by the President and presented with their degrees. Master's candidates also wear black gowns for the ceremony and are hooded on stage by the Dean of Graduate Studies. Doctoral candidates wear maroon gowns and are hooded on stage by the Dean of Graduate Studies. They shake hands with the Chancellor of the University and are then seated with the faculty, symbolizing their initiation into the academic profession.

Honorary Degrees

The custom of awarding honorary degrees at Concordia University dates back to 1965, the first year that a graduate degree was presented to a member of the graduating class of what was then Sir George Williams University. Prior to that date both Sir George Williams University and Loyola College (Concordia's two founding institutions) provided undergraduate level instruction only. In the years since 1965 almost 200 distinguished personalities from the arts, the world of science, business, the humanities and related disciplines have been chosen to receive this highest of academic honours.

Eligibility is determined by the scope of an individual's accomplishments during his or her career. Those accomplishments must be sufficiently broad to ensure that the awarding of an honorary degree brings credit both to Concordia and to the academic community as a whole. In recent years, Concordia has placed considerable emphasis on selecting honorands because of their specific commitment to this University.

All members of the Concordia community are encouraged to participate actively in the nomination process. The honorary degree is actually awarded by the Board of Governors upon recommendation of the University Senate. Save in exceptional circumstances, current members of the faculty, the administration, the Board of Governors, students and staff and holders of public office cannot be nominated.

The Honorands

June 2005: Robert Daudelin, LL.D., Shirin Ebadi, LL.D., John Forzani, LL.D., Leo Goldfarb, LL.D., Norman D. Hébert, LL.D., Ted Moses, LL.D., Bengt Saltin, LL.D., Claude Taylor, LL.D.

December 2005: Allan Gotlieb, LL.D., Brian Mulroney, LL.D., Michael Desbois Spencer, LL.D.

June 2004: André Chagnon, LL.D., Norman Hébert, LL.D., Maryvonne Kendergi, LL.D., Alistair MacLeod, LL.D., Guido Molinari, LL.D., John O'Brien, LL.D., Henri-Paul Rousseau, LL.D., Claude Ryan, LL.D., Lui Che Woo, LL.D.

November 2004: Marc Garneau, LL.D., Michael Gordon Gibbons, LL.D., Daniel Langlois, LL.D., Bruce Mallen, LL.D.

June 2003: Sidney Altman, LL.D., John Tyler Bonner, LL.D., Robert E. Brown, LL.D., Thomas Brzustowski, LL.D., Stephen A Jarislowsky, LL.D., Eric Kandel, LL.D., Richard Monette, LL.D., Giles Ouimet, LL.D., Larry Swanson, LL.D.

November 2003: Jill Ker Conway, LL.D., Natalie Zemon Davis, LL.D., Leonard Ellen, LL.D., Ronald Lawless, LL.D., John C. Major, LL.D., Jean-Paul Morin LL.D.

June 2002: Assia Djebar,LL.D., John W. Dobson, LL.D., Julio García Espinosa, LL.D., Seamus Heaney, LL.D., Julia Levy, LL.D., Ahmed Zewail, LL.D.

November 2002: Gregory Baum, LL.D., Francesco Bellini, LL.D.

June 2001: Louise Arbour, LL.D., Geoffrey Ballard, LL.D., Lionel P. Hurtubise, LL.D., Henry Mintzberg, LL.D., Robert Savoie, LL.D., Shirley Thomson, LL.D.

November 2001: Claire l'Heureux-Dubé, LL.D.

June 2000: Jean Sutherland Boggs, LL.D., Barrie J. Frost, LL.D., Serge Gaudin, LL.D., Ann Saddlemyer, LL.D., James M. Stanford, LL.D.

November 2000: John Roth, LL.D., Giancarlo Elia Valori, LL.D.

June 1999: Annie Proulx. LL.D., James W. Carey, LL.D., Hon. J. Edward Broadbent, O.C., LL.D., Robert Wall, LL.D., Peter Munk, O.C., LL.D., Charles-Albert Poissant, LL.D., Charles Sirois, LL.D.

November 1999: Robert Lepage LL.D., Lise Thibault, LL.D.

June 1998: André Bazergui, LL.D., David Jay Bercuson, LL.D., Douglas Cardinal, LL.D., Dominic D'Allessandro, LL.D., John Economides, LL.D., Carol Shields, LL.D., William Yip, LL.D.

November 1998: Henryk Górecki, LL.D., Paul Martin, LL.D.

June 1997: Morrel Bachynski, LL.D., Wendy Cukier, LL.D., Roland Doré,O.C., LL.D., Pierre Jean Jeanniot, O.C., LL.D., Emmet Johns, S.J., LL.D., Elisabeth Mann Borgese, O.C., LL.D., Annette Michelson, LL.D., Jean A. Pouliot, O.C.,

LL.D., Heidi Rathjen, LL.D., Jeanne Renaud, LL.D., Esmeralda M.A. Thornhill, LL.D.

November 1997: Ned Goodman, LL.D.

June 1996: Lawrence S. Bloomberg, LL.D., James Borcoman, LL.D., Paul T. Kefalas, LL.D., E. Lee Kolber, LL.D., Claudette MacKay-Lassonde, LL.D., David Matas., LL.D., Wilfred Whyte McCutcheon, LL.D., Donald C. Savage, LL.D., Anne Sylvstre, LL.D.

June 1995: Myer Bloom, LL.D., Gilles Carle, LL.D., Jacques-G. Francoeur, O.C., LL.D., Peter C. Godsoe, LL.D., Linda Hutcheon, LL.D., Michèle St. Jean, LL.D., Eric McLean, LL.D., Michel Normandin, LL.D., Peter A. Vamos, LL.D.

June 1994: Thomas R. Berger, O.C., Q.C., LL.D., Thérèse Gouin Décarie, O.C., O.Q., LL.D., Otto Joachim, LL.D., John McCarthy, LL.D., Jean E. Pigott, LL.D., Margaret Power, R.S.C.J., LL.D., Mildred Helfand Ryerson, LL.D., Huguette Tourangeau, LL.D., Ben Weider, LL.D.

November 1994: Matthew W. Barrett, LL.D., Joe Clark, LL.D.

June 1993: Sacvan Bercovitch, LL.D., Edgar Andrew Collard, O.C., LL.D., William K. Everson, LL.D., Mildred B. Lande, LL.D., Alanis Obomsawin, O.C., LL.D., Jean-Louis Roux, LL.D., Martha Sloan, LL.D., Velma Weeks, LL.D.

November 1993: Mary Eberts, LL.D., Victor C. Goldbloom, O.C., O.Q., LL.D.

June 1992: Charles Bronfman, O.C., LL.D., Jeff W. Edington, LL.D., François-Marc Gagnon, LL.D., Carleen Maley Hutchins, LL.D., Judith Maxwell, LL.D., Eigil Pedersen, LL.D., Maurice Podbrey, LL.D., Guy Saint-Pierre, LL.D., Arthur Solomon, LL.D.

November 1992: Alan B. Gold, LL.D.

June 1991: Jean Coulthard, LL.D., Jean Coutu, LL.D., Donald Knuth, D.Sc., David Rome, LL.D., Rosalie Silberman Abella, LL.D., Michel Tremblay, D.Litt., Lorne Webster, LL.D.

November 1991: Bertha Wilson, LL.D.

June 1990: Doris Anderson, LL.D., Paul Desmarais, LL.D., Jaime Escalante, LL.D., Ursula Franklin, LL.D., Wally Gentleman, LL.D., Mel Hurtig, LL.D., Antonine Maillet, D.Litt., John Polanyi, LL.D.

June 1989: George Drummond Birks, LL.D., Claude Castonguay, LL.D., Paterson Ewen, LL.D., Jean-Paul Gourdeau, LL.D., Gordon Sparling, LL.D., Robert H.

Tanner, LL.D., William I. Turner, Jr., LL.D., Susan Mann Trofimenkoff, LL.D., Dorothy A. Wills, LL.D.

November 1989: Margaret Catley-Carlson, LL.D., Gratien Gélinas, D.Litt.

June 1988: Raymond T. Affleck, LL.D., Stafford Beer, LL.D., Subrahmanyan Chandrasekhar, LL.D., Ronald J. Gillespie, LL.D., Jori Smith, LL.D., Elizabeth Spencer, LL.D., Allan R. Taylor, LL.D., Ashok K. Vijh, LL.D., Wei Yu, LL.D.

November 1988: J.V. Raymond Cyr, LL.D., Paul-Émile Léger, LL.D.

June 1987: Léon Bellefleur, LL.D., Robert J. Brodrick, LL.D., Margaret Fulton, LL.D., Eric Kierans, LL.D., Hugh MacLennan, D.Litt., J. Gerard McDonough, s.j., LL.D., Peter M. McEntyre, LL.D., William B. Rice, LL.D.

November 1987: W. Earle McLaughlin, LL.D.

June 1986: Lise Bissonnette, LL.D., Robert Choquette, D.Litt., Simone de Beauvoir, D.Litt. (posthum.), Jacques de Tonnancour, LL.D., Jacques Genest, D.Sc., Grace Hartman, LL.D., Phyllis Lambert, LL.D., William McMurray, LL.D., Sylvia Ostry, LL.D., Hans H. (David) Stern, LL.D., Robert Stollery, LL.D.

June 1985: N. Byron Cavadias, LL.D., Norman Cohn, LL.D., Frank R. Crawley, LL.D., Bernard Lamarre, LL.D., Theodore Lande, LL.D., Stephen Lewis, LL.D., George Geoffrey Meyerhof, LL.D., Max Stern, LL.D., Charlotte Hunter Tansey, LL.D., Jean-Paul Vinay, LL.D.

June 1984: Lloyd I. Barber, LL.D., J. Clair Callaghan, LL.D., Lionel Chevrier, LL.D., Carl B. Crawford, LL.D., Dorothy Davis, LL.D., Peter J. Denning, LL.D., Jean-Paul Lemieux, LL.D. H.J. Barrington Nevitt, LL.D., Madeleine Parent, LL.D., Norma Springford, LL.D., Guy Sylvestre, LL.D., Violet Walters, LL.D., Orson Wheeler, LL.D.

June 1983: Roch Bolduc, LL.D., Muriel H. Duckworth, LL.D., James M. Ham, LL.D., Pierre Laurin, LL.D., Elvie L. Smith, LL.D.

June 1982: Jack Bordan, LL.D., C. Alec Duff, LL.D., Arthur J. Gosselin, LL.D., John R. Hannan, LL.D., Harry J. Hemens, LL.D., Myer Horowitz, LL.D., Robert H. Marchessault, D.Sc., Arthur P. Pascal, LL.D., Sam Tata, LL.D., Douglas Tushingham, LL.D., Douglas T. Wright, LL.D.

June 1981: Jules Deschênes LL.D., Alphonsine Howlett, LL.D., Yvonne Hubert, LL.D., Josef Kates, LL.D., Gordon M. MacNabb, LL.D., Philip H. Surrey, LL.D., Thomas H.B. Symons, LL.D.

June 1980: Thérèse Casgrain, LL.D., W.T.G. Hackett, LL.D., Murray Laufer, LL.D., Walter F. Light, LL.D., Eric O'Connor, s.j., LL.D.

November 1980: Thomas Daly, LL.D., Gérard Dion, LL.D., Roger Gaudry, LL.D., Ethel Stark, LL.D.

June 1979: Robert E. Bell, LL.D., Camille A. Dagenais, LL.D., Donald C. MacPhail, LL.D., Oscar Peterson, LL.D., Maurice Proulx, LL.D., Fernand Séguin, D.Sc., Wilfrid Cantwell Smith, LL.D.

December 1979: Margaret Atwood, LL.D., Mario Duschenes, LL.D.

June 1978: Robert A. Boyd, LL.D., Harry J. Boyle, LL.D., John Hastings Dinsmore, LL.D., James Gilchrist Finie, LL.D., J. Gordin Kaplan, D.Sc., Louis Muhlstock, LL.D., Irène Senécal, LL.D.

December 1978: A. Hollis Marden, LL.D.

June 1977: Charles S. Carter, LL.D., Guy Desbarats, LL.D., Bernard Lonergan, s.j., LL.D., Norman McLaren, LL.D.

November 1977: Frances Perot Foster, LL.D.

June 1976: Gerald Emmet Carter, LL.D., George A. Fierheller, LL.D., Charles Fox, LL.D., Larkin Kerwin, LL.D., Irving Layton, LL.D., Gerald LeDain, LL.D.

November 1976: Robert Ayre, LL.D., Irving Richard Tait, LL.D.,

June 1975: Franz Paul Decker, LL.D., Louis-Paul Dugal, LL.D., Neil Barron Hutcheon, LL.D., Moses Levitt, LL.D., Mary MacCormack, LL.D., Patrick G. Malone, s.j., LL.D., Myer F. Pollock, LL.D., Louis Rasminsky, LL.D., Anthony Walsh, LL.D.

November 1975: David J. Azrieli, LL.D., Donald Olding Hebb, LL.D., Agnes C. Higgins, LL.D., Renée Vautelet, LL.D.

June 1973: C.F. (Bill) Carsley, LL.D., Douglas Burns Clarke, LL.D., James Alexander Corry, LL.D., Frederick Hubbard, LL.D., Paul Lambert, LL.D., Vernon F. McAdam, LL.D.

June 1972: Louis-Phillippe Bonneau, LL.D., Fraser F. Fulton, D.Sc., John Rutherford Heron, LL.D., Robert Ferguson Legget, D.Sc., René Pomerleau, LL.D., Casimir G. Stanczykowski, LL.D.

November 1972: Aylmer A. Ryan, LL.D. Carl Arthur Winkler, D.Sc.

June 1971: Pierre Dansereau, D.Sc., Emil Fackenheim, LL.D., St. Clair Holland, LL.D., Alfred Pellan, LL.D., Harold Rocke Robertson, LL.D.

November 1971: Jean-Jacques Bertrand, LL.D., Alberto Mortara, LL.D.

June 1970: Charles Henri Barbier, LL.D., Eedson Louis Millard Burns, LL.D., Paul Gallagher, LL.D., Saul Hayes, Q.C., LL.D., George Maxwell Hobart, LL.D., Alphonse Riverin, LL.D.

November 1970: Bryce Mackasey, LL.D., Elizabeth Homer Morton, D.Litt., George Woodcock, D.Litt.

June 1969: Maureen Katherine Stewart Forrester, LL.D., Ted Sheffield, LL.D., Robert Henry Lawson Slater, LL.D., Percy Weissman, LL.D.

June 1968: Lionel Boulet, D.Sc., James Robbins Kidd, LL.D., Samuel H. Schecter, LL.D.

November 1968: Herman Smith Johannsen, LL.D., Robert Alan Speirs, LL.D., Jan Tinbergen, LL.D.

May 1967: Harold Roy Crabtree, LL.D., Jean Drapeau, LL.D., Pierre Dupuy, LL.D., Gustave Gingras, LL.D., Karl Gunnar Myrdal, LL.D., Amos Saunders, LL.D.

November 1967: J. Gerald Hagey, LL.D., Kathleen Ruby Jenkins, LL.D., Maurice Frederick Strong, LL.D.

May 1966: John James Deutsch, LL.D., Everett Cherrington Hughes, LL.D.

October 1966: *(Special Convocation---Laying of Cornerstone and Dedication of the H.F. Hall Building)* Paul Gérin-Lajoie, LL.D., Henry Foss Hall, LL.D., Wilfred N. Hall, LL.D., Omond McKillop Solandt, LL.D.

November 1966: Francis Reginald Scott, D.Litt., Colin Wesley Webster, LL.D.

May 1965: Jean Lesage, LL.D., Alphonse-Marie Parent, LL.D., Howard Irwin Ross, LL.D., Evan H. Turner, LL.D.

November 1965: Zubin Mehta, LL.D., B. Wynne Roberts, LL.D.

Medals and Prizes

At each Convocation ceremony, a number of distinguished graduates are honoured by receiving special awards and prizes.

The Balvir Singh Medal is awarded annually when merited to a graduating student with a Master of/Magisteriate in Arts (Economics) for outstanding achievement in the program.

The Edward Eastman McCullough M.A. History Award is a prize of $100, awarded annually, when merited, to a graduating student with a Master of/Magisteriate in Arts (History) in consideration of a research essay judged to be of exceptional merit.

The F.A. Gerard Prize was established in recognition of the late Dr. F.A. Gerard, who initiated and guided the development of the Master of/ Magisteriate in Engineering program which was directed towards meeting the needs of the practicing engineer. It is awarded annually, when merited, by the Dean of Engineering and Computer Science to the most deserving graduate of the Master of/Magisteriate in Engineering program.

The First Graduating Class Award is presented on behalf of the first graduating class of the Faculty of Arts, Science and Commerce of Sir George Williams College, known as the Guinea Pig Club, for the most innovative and new contribution either academic or extra-curricular to University life.

The Gordon Fisher Prize for Journalism is a prize of $500 awarded to the most outstanding graduating student in the Journalism Diploma program.

The Governor General's Gold Medal is awarded annually to the most outstanding graduate student.

The Herbert F. Quinn Medal for Political Science, established in honour of Dr. Herbert F. Quinn, founder of the Sir George Williams Political Science Department, is awarded to a graduating student with the highest standing in the Master of/Magisteriate in Arts (Public Policy and Public Administration).

The Joe Kelly Graduate Award is awarded to a graduating student in consideration of a thesis in management or related discipline and judged to be of exceptional merit.

The Julius and Ilka Ekler Book Prize is awarded to a graduate student in recognition of his/her outstanding achievement in the area of Judaic Studies.

The Master of Computer Science Prize is awarded annually, when merited, by the Dean of Engineering and Computer Science to the most deserving graduate of the Master of/Magisteriate in Computer Science Program.

The Master of Applied Science Prize is awarded annually, when merited, by the Dean of Engineering and Computer Science to the most deserving graduate of the Master of/Magisteriate in Applied Science program.

The Doctoral Prize in Engineering and Computer Science is awarded annually, when merited, by the Dean of Engineering and Computer Science to the most deserving graduate of the Doctor of/Doctorate in Philosophy programs in the Faculty of Engineering and Computer Science.

The Nishith Mukerji Medal was established in memory of Nishith Mukerji and is awarded annually, when warranted, to the M.Sc. Physics thesis student with the highest standing in the program.

The M.B.A. Medal is awarded to the highest ranking student graduating with the degree of Master of/Magisteriate in Business Administration and donated by Mr. and Mrs. Infilise of Quadra Chemicals Ltd.

The Stanley G. French Medal is awarded to a graduate student with high academic standing for outstanding contributions to student life, in honour of the first Dean of Graduate Studies of Concordia University.

Graduate Admission

With the exception of the Special Individualized programs and the Ph.D. in Humanities program, all graduate programs offered by the University are attached to one of the three Faculties of the University or The John Molson School of Business, under the general supervision of the University Council of the School of Graduate Studies and its chair, the Dean of Graduate Studies. A survey table listing all current programs and fields of advanced study is provided in the next section. The programs are described in full in later chapters. Existing programs are a reflection of research interests, of the professors and researchers on staff, and of the needs of the community served by the University. Inquiries concerning these programs should therefore be sent to the relevant departments.

The Dean of Graduate Studies is responsible to ensure the quality of the admission of students to the doctoral, master's, diploma and certificate programs of the University on the recommendation of the Graduate Program Directors. The admission is based on an assessment of the student's qualifications for the proposed program of study and entails specific credit, residence, course, thesis, and examination requirements, which vary from program to program.

Accelerated Admission to Ph.D. Programs (Fast-Tracking)

- Accelerated admission (fast-tracking) describes a process whereby exceptional students are admitted to Ph.D. programs without a master's/ magisteriate degree in the same discipline.
- Students who follow this process must show high academic performance or potential evidenced by an outstanding GPA, appropriate research publications in the field of study, a research topic at the master's/ magisteriate level which is advanced enough for a doctoral thesis proposal, or other similar demonstrations of achievement.
- Students who are accepted for accelerated admission and who are currently registered in a master's/magisteriate degree program, or who would do so directly from a bachelor's degree, are expected to complete the course component of the thesis option master's/magisteriate in the same discipline in addition to the standard academic requirements for the doctoral program.

Admission Requirements

Admission requirements are set out in each program description.

GPA Admission Requirement
Doctoral programs require candidates for admission to have completed a master's/magisteriate (or equivalent) with high standing (e.g., with honours,

or a GPA of at least 3.00). Master's programs require candidates for admission to have completed a bachelor's/baccalaureate (or equivalent) with high standing (e.g., with honours, or a GPA of at least 3.00). Diploma and graduate certificate programs require candidates for admission to have completed a bachelor's/ baccalaureate (or equivalent) with high standing.

TOEFL/IELTS Admission Requirements
The minimum Test of English as a Foreign Language (TOEFL) admission requirement for all graduate programs for international students whose first language is not English or French, must be a score of at least 550 (213 on the computer-based TOEFL), or its equivalent in other acceptable standard tests. Applicants whose prior degrees are not from an English or French speaking university may be required to submit English Language Test scores. The IELTS (International English Language Testing System) requires a minimum Band score of 6.5. Individual programs may require a higher score. Students should check their program's requirements.

CELDT Admission Requirement
Graduate Program Directors may require applicants to write the Concordia English Diagnostic Test (CELDT) as a condition of admission. Depending on the result, students may be required to complete English language courses in addition to their program requirements.

Graduate Application Fee
All web applications for admission to a graduate program must be accompanied by a $50.00 application fee, payable by MasterCard or Visa. This fee is neither refundable nor applicable to tuition fees.

Deferment of Admission
Applicants who request a deferral of admission should contact their program in order to request permission for a change of admission date. There is a $25. charge for such requests.

The Application Process

Applicants to graduate programs should apply online at:
http://welcome.concordia.ca/

Application Deadlines
Application deadlines vary depending on the program. In most cases, however, international applicants must arrange for all required documentation to be in the appropriate office at least six months before the commencement of classes. As a general rule, the following application deadlines must be respected: February 15 for Fall admission, June 15 for Winter admission, and October 15 for Summer admission. (Many programs only admit new students for the Fall term). Application deadlines are set out in each program description. Admission files

must be complete by the deadline indicated. The deadline for students applying for Graduate Fellowships and International Tuition Fee Remissions is **December 15.** (**Note:** The Fellowship deadline for graduate programs in Psychology is January 3; the fellowship deadline for the MFA is February 1).

Internal Transfer
If a student wishes to transfer from one program to another (e.g., from Religion to Philosophy, or from a Master of Science to a Doctor of Philosophy program) a new application, along with the required $50.00 application fee, must be submitted to the new program with new documentation (excluding transcripts in the case of a transfer within the same department).

Transfer Credits
Depending on the admission policy of a program, a student may be allowed transfer credit into that particular program for previously completed graduate level work. The applicant must provide official transcripts documenting the completed work and the grades obtained for this work, as well as proof of withdrawal from the program from which the credit is requested. These grades must meet the University's admission standards. Transfer credit is permitted only for courses in which the final mark is equivalent to a "B" or better for master's and Ph.D. programs, and equivalent to a "B-" or better for diploma and certificate programs, except those Diploma and Certificate programs with a 3.00 GPA admission requirement. Transfer credits, including inter-university courses, cannot normally exceed one-third of the total credit requirements of a given program and must be approved by the Dean of Graduate Studies. It should be noted that while transfer credits for master's and doctoral programs may be approved, they are for academic and not financial credit.

Prerequisite Courses
Qualified applicants who are deficient in certain prerequisite courses may be admitted to graduate study with the requirement that they take up to 12 undergraduate credits in addition to their regular graduate program as part of the student's degree requirements. Students register for such courses as qualifying students through their graduate program and must obtain a minimum of a *B* grade in each course.

Exemptions
According to the policy of the department, students may be granted an exemption from a required course in the program. In this case, the student will select another course in place of the one for which exemption has been granted, in order to fulfill the credit requirements for the program. If a course exemption has been granted, that course cannot be subsequently taken for credit toward the graduate certificate, diploma or degree.

Code Permanent
The Québec Ministry of Education (MEQ) requires all registered students to have a 'code permanent' (a unique identifying number) which is assigned by the Ministry. **Students who do not provide a valid code with their application will be sent a code permanent data form with their letter of acceptance.** This form must be completed and returned with appropriate documentation so that the MEQ can create a code permanent. Most students who have attended High School or CEGEP in Québec or who have received Québec Financial Aid have already been assigned their permanent code. This number should be entered on the student's application form.

Students should refer to the following website for additional information: http://registrar.concordia.ca/cqf/codeperm.htm

Required Citizenship Documents

For information on required documentation for International Students, see section on **International Students**, page 778.

Citizenship or Permanent Residency Documents
Canadian citizens and Permanent Residents (Landed Immigrants) must present proof of their status in Canada. Students who have not provided such evidence are automatically charged international tuition fees. To prove Canadian citizenship or Permanent Resident status, applicants must supply the School of Graduate Studies with a legible photocopy of one of the following documents:

Canadian birth certificate;
Canadian citizenship card (both sides), Permanent Resident paper (IMM-1000), or Permanent Resident card (both sides);

Proof of Québec Residency
If, upon acceptance to a regular University program, proof of Québec residency has not been established, students should refer to the following website for further information http://registrar.concordia.ca/cqf/queres.htm

Exemption to non-Québec Resident Fee
Students enrolled in the Master of/Magisteriate in Business Administration privatized program (International Aviation Option or Executive Option), the Investment Management programs and all Ph.D. programs are exempt from paying the non-Québec resident fee. However, courses completed outside these programs are subject to the $99.42 per credit non-Québec resident fee.

Classification of Graduate Students

Full-time
Students in a graduate certificate or diploma program are classified as full-time if they register for 8 or more credits in one term, 16 or more credits in two

terms, or 24 or more credits in three terms. A student classified as full-time at the time of initial registration in a master's or doctoral program normally retains this classification throughout the program. In determining student status, all credit-bearing components are taken into account, for example, prerequisite courses, comprehensive examinations, thesis and research courses, internships and extra courses.

Part-time
Students who are not full-time as described above are classified as part-time.

Note: Changes to student classification (from full-time to part-time or vice-versa) must be submitted prior to the DNE deadline of a given term. A change of student classification may have implications for students receiving loans or bursaries; students should check the regulations associated with their loans or bursaries.

Within Minimum Residence
All master's and doctoral programs have a minimum residence requirement. The School of Graduate Studies requires this minimum to be at least three terms for master's degrees and six terms for doctoral degrees. This is the minimum period of time which must elapse between a student's initial registration in the program and the student's graduation. There is no minimum residence requirement for diploma and certificate programs.

Independent Graduate Students
Independent graduate students enroll in a particular graduate course, without enrolling in the graduate program of which that course forms a part. Normally, independent graduate students take no more than the equivalent of two graduate courses per term, and no more than the equivalent of four graduate courses from the courses of any graduate program up to 12 credits. Only those who meet the prerequisite requirements for admission to the graduate course in question will be considered as independent graduate students, and in every case permission of the Graduate Program Director must be obtained. Meeting the minimum requirements of an individual course does not guarantee entry to that course, as preference will be given to regular students. Credits earned by independent graduate students may be considered for transfer credit in the event that the students are subsequently admitted to a graduate program and become candidates for a certificate, diploma or degree. Normally, an independent graduate student who receives an F is no longer allowed to take any more courses in the program associated with the failed course.

Students enrolled in a regular degree, diploma or certificate program who wish to take credits outside their normal requirements will register as independent graduate students for any such courses at the graduate level, with the permission of the Graduate Program Director of the program offering the course, and as independent undergraduate students for undergraduate courses. They

will be subject to the fees and regulations applicable to such categories of students. Independent students are normally classified as graduate part-time students. Graduate independent students are eligible to audit courses.

Visiting Students
Graduate visiting students are graduate students from other universities who have been authorized by their home universities to take graduate courses at Concordia University. They are subject to the regulations of Concordia University.

Visiting/Exchange Students
Concordia's Centre for International Academic Cooperation (CIAC) as a member of La Conférence des recteurs et des principaux des universités du Québec (CREPUQ), administers ISEPs with institutions of higher learning. These programs permit Concordia University students to study for a term or an academic year in selective institutions while remaining as registered students at Concordia University. It also allows students from these institutions to study at Concordia. Further information and application forms can be obtained by contacting ciac@vax2.concordia.ca

Auditing Students
Auditing students are graduate students who, with the permission of the Graduate Program Director of the program in which the course is offered, may attend a class that is not a requirement of the student's program. There is no credit value assigned when courses are audited and students are not required to complete assignments or write examinations. See section on **Financial Regulations** for information on tuition fees.

Leaves of Absence from Programs

Prior to determining the actual beginning and length of a leave, students should confirm with their Graduate Program Director and supervisor that all required components of their degree programs are available at a later date. Whenever possible, the beginning and end of a leave should coincide with the beginning and end of a term. Student requests for a Leave of Absence must be approved by the Graduate Program Director prior to the DNE deadline. Leaves are granted only to students in good academic standing (academic standing is based on a minimum of 12 credits. Students with fewer than 12 credits may apply for a leave of absence.) Students apply in advance by completing a Student Request Form available from their Graduate Program Director. Requests for leaves for more than three terms must be approved by the Dean of Graduate Studies. While on leave, the student's program time-limit will be extended by the period of the leave. All deadlines for work in progress will be extended by the period of the leave. No changes to the student's academic status will be made during a leave. A leave from a program of study may have implications for

students receiving loans or bursaries; students should check the regulations associated with their loans or bursaries. Both Canadian and International students are permitted to apply for a leave of absence from their program of study.
International students on an approved leave of absence do not pay fees for the Concordia Health Insurance Plan for International Students and they are not covered by (insured under) any health insurance plans.
Note: Leaves are not approved for graduate students requesting a leave in order to take courses in another graduate program.

Leave without access to university services. Graduate students may apply for a leave for personal reasons. The student will not have access to university and student services or health plan coverage. No fees are charged.

Leave with access to university services. Graduate students may apply for a leave for compelling medical reasons. The student will have access to university and student services. A flat service fee of $150 per term will be charged. Leaves with access to university services must be supported by appropriate documentation before being considered for approval by the Dean of Graduate Studies.

Parental Leave. All graduate students are entitled to parental leave of up to three consecutive terms during their program of study on the occasion of the birth or adoption of a child. The student will have access to university and student services. However, students on Parental Leave are not covered by (insured under) any health insurance plans. No fees will be charged. Students holding a Concordia Fellowship will receive a deferral of their fellowship for the period of leave. In the case of other fellowships, the regulations of the granting agencies will apply.

Qualifying Students

Students admitted as qualifying program students take undergraduate courses as preparation for application to a graduate program.

Some students may be concurrently registered in the graduate program to which they had been admitted as well as to a qualifying program if the number of prerequisite credits is 12 or less.

- Individuals who have completed an undergraduate program leading to a bachelor's degree, but whose preparation is inadequate for immediate admission to a graduate program, may, upon recommendation by a department, be permitted to register for a qualifying program of advanced undergraduate studies.
- The minimum qualifications for entry into the qualifying program are defined as follows: at least 24 course credits in the proposed field of study;

at least a *B* average in these courses (*B-* for Diploma and Graduate Certificate courses), with no grade lower than *C*; and at least a *C* average in their final two undergraduate years.

- Qualifying programs consist normally of four or five senior undergraduate courses. In certain exceptional cases, students may be required to take more than this number, and hence spend more than one full year as qualifying students.
- Qualifying students must have their program of study approved by the relevant Graduate Program Director prior to each registration period.
- Students in a qualifying program must pay the appropriate undergraduate fees.
- **Satisfactory completion of the courses taken in a qualifying program does not guarantee automatic admission to a graduate program.** Students must apply, or reapply, for admission to graduate studies during or after the qualifying program. Their applications will be considered along with all other applications received at that time, and will not take priority over those of other applicants who may be better qualified.

Student Requests

Applications from full-time or part-time students for exceptions to academic regulations or related matters should be submitted on a Student Request Form available from the student's graduate program secretary. Student requests should be signed by the student, the Graduate Program Director and sent to the Dean of Graduate Studies for approval. **A request is not deemed to be approved until authorized by the School of Graduate Studies.**

Re-entry of Withdrawn Students

Students who have been withdrawn from a graduate program may wish to be considered for re-entry into the program. Normally, students must have been withdrawn from the program for a minimum of five terms in order to be reconsidered. If recommended by the program, these students will then be considered as a new admission, i.e., new application, transcripts etc.

Graduate Awards

Applicants requiring information concerning awards for graduate study should contact the Graduate Awards Office, School of Graduate Studies, 2145 Mackay, Montreal, and should also visit Counseling and Development Services, Hall Building Room 440, Sir George Williams Campus, or 7141 Sherbrooke W. Administration Building Room AD 103, Loyola Campus.

Graduate fellowships are awarded through competition on the basis of academic excellence to students enrolled or planning to enroll full-time in a program leading to a master's or doctoral degree at the University. Academic excellence is broadly interpreted to include skills, professional experience and similar factors relevant to the candidate's program of study. The awards listed below are all administered by the Graduate Awards Committees of the School of Graduate Studies.

The David J. Azrieli, Dominic D'Alessandro Fellowship, John W. O'Brien, Stanley G. French and Concordia 25th Anniversary Fellowship awards are tenable for only one year. Students eligible for more than 3 terms of support will usually hold a Concordia University Graduate fellowship in the subsequent eligible terms of support.

Note: The candidate's eligibility for all fellowships is calculated from the date of entry into the student's program.

J.W. McConnell Memorial Fellowships. These fellowships, supported by the J.W. McConnell Foundation, have a value of $2,900 per term at the master's level; $3,600 per term at the doctoral level. They are normally tenable for a maximum of four terms at the master's level and a maximum of nine terms at the doctoral level, providing certain conditions are met. These conditions include satisfactory performance in the graduate program and making applications for awards from external agencies. Fellows must be registered full-time in their program at the time the award commences. The McConnell fellowships and are restricted to Canadians and permanent residents.

Concordia University Graduate Fellowships. These fellowships are awarded to candidates intending to study full-time in a master's or doctoral program. The fellowship, valued at $2,900 per term at the master's level and $3,600 per term at the doctoral level, is normally tenable for a maximum of four terms at the master's level and a maximum of nine terms at the doctoral level. Fellows must be registered full-time in their program at the time the award commences. Continuation of the award beyond the first year is subject to satisfactory progress in the program and making applications for awards from external agencies. These awards have no citizenship restriction.

Graduate Awards

David J. Azrieli Graduate Fellowship. This fellowship is made possible by an endowment established by Dr. David J. Azrieli and is valued at $17,500 per annum or $5,833 per term for a maximum of 3 terms. The fellowship is awarded on the basis of academic excellence. It is tenable for one year (3 terms) by a full-time master's or doctoral student, without citizenship restriction.

Dominic D'Alessandro Fellowship Fund. This fellowship is made possible by an endowment established in honor of Mr. Dominic D'Alesandro and is valued at $15,000 per annum or $5,000 per term for a maximum of 3 terms. The purpose of the fellowship is to support master and doctoral students in research-oriented programs and encourage academic excellence. It will be adjudicated by the School of Graduate Studies Graduate Awards Committee and awarded on a rotating basis as follows: Faculty of Arts & Science, Faculty of Engineering & Computer Science, John Molson School of Business, Faculty of Fine Arts. It is tenable for one year (3 terms), non renewable, by a full-time research based master's or doctoral student, without citizenship restriction.

John W. O'Brien Graduate Fellowship. This fellowship was established in recognition of the ten years Dr. John O'Brien served as Rector of Concordia University, following five years as Principal of Sir George Williams University. The fellowship is tenable by a full-time master's or doctoral student in any discipline with no citizenship restriction. The value is $3,300 per term at the master's level or $4,000 per term at the doctoral level for a maximum of three terms.

Stanley G. French Graduate Fellowship. This fellowship was established in recognition of the fifteen years that Dr. Stanley G. French served as Dean of Graduate Studies. It is tenable by any full-time master's or doctoral student, with no citizenship restriction. The value of this award is $3,300 per term at the master's level or $4,000 per term at the doctoral level for a maximum of three terms.

Concordia University 25th Anniversary Fellowship. This fellowship was established to commemorate the joining of Loyola College and Sir George Williams University. It is tenable by any full-time master's or doctoral student with no citizenship restriction. The value of this award is $3,300 per term at the master's level or $4,000 per term at the doctoral level for a maximum of three terms.

Concordia University International Tuition Fee Remissions Awards. The Government of Quebec allows universities to exempt a certain number of full-time international students who have been admitted to master's or doctoral programs from paying academic tuition fees at the international rate. Students awarded international tuition fee remissions will be charged academic fees at the same rate as Quebec students. These awards are valued at 11.25 credits per term. At Concordia, these international tuition fee remissions will be granted to

full-time master's and doctoral students on the basis of academic excellence. The maximum length of tenure is within the first 8 terms of a doctoral program and within the first 4 terms of a 45 credit master's program, the first 5 terms of a 57 credit master's program or the first 6 terms for master's programs of 60 credits or more. Students who already benefit from an international tuition fee remission as a result of an agreement between the Government of Quebec and their home country or any other reason, as well as students who are on full scholarships from their own governments, are not eligible for these international tuition fee remission awards.

Information concerning international tuition fee remission awards can be obtained from the Graduate Awards Office, 2145 Mackay, Room M 105, or by email at awardsgs@vax2.concordia.ca.

The same application form serves for all of these fellowships and international tuition fee remission awards. For students presently registered in the program for which they are seeking support. Application forms are available from the website at http://graduatestudies.concordia.ca. An application for a fellowship and/or international tuition fee remission award and all supporting documentation (e.g., transcripts, letters of reference and statement of purpose) should be sent before December 15 to the Graduate Program Director of the program in which the student proposes to enroll. Awards are normally tenable from September 1st, but may be deferred to January 1 of the subsequent year, at the discretion of the graduate awards committee. The application deadline is December 15, except for graduate programs in Psychology whose deadline is January 3 and the MFA whose deadline is February 1. For new admissions the fellowship/fee remission application is part of their admission application and subject to the same deadlines listed above.

All awards are subject to Concordia's multiple winner policy. In all cases, it is to the student's advantage to apply for as many awards as possible. Information regarding the various kinds of graduate awards can be obtained from the Graduate Awards Office located in the School of Graduate Studies. The Graduate Awards Office has up-to-date information on awards available from government and other granting agencies. The School of Graduate Studies also produces a Graduate Awards Directory, available on the website at http://graduatestudies.concordia.ca.

All values of the awards listed below are approximate. The value of the award is calculated based on the return generated by the endowment minus administrative fees. Unless indicated, please consult the various departments concerning deadlines dates and application forms.

Fellowships

Armand C. Archambault Fellowship. This fellowship was established by the Estate of the late Mr. Armand C. Archambault and is valued at approximately $4,100 per annum. It is tenable for one year by a full-time master's or doctoral student. The fellowship is administered by the School of Graduate Studies, Graduate Awards Office. The deadline date for application is April 10.

Azrieli Foundation Graduate Fellowship in Holocaust Studies. This fellowship is open to full-time master's and doctoral students whose research is in the area of the destruction of European Jewry in the 20th century. The award is valued at approximately $7,500 and is renewable once at the master's level and three times at the doctoral level. It is adjudicated by the Director of the Montreal Institute for Genocide and Human Rights Studies and the Dean of the Faculty of Arts and Science. For application form and deadline date information please contact the Institute at 848-2424 extension 4514.

Bank of Montreal Pauline Vanier Fellowship. This fellowship is open to women with two years of cumulative business experience who are Canadian citizens or permanent residents entering the M.B.A. program at Concordia as full-time students. The award is tenable for two years and is valued at $10,000 per year. The candidate is selected by the M.B.A. program. The deadline date for application is April 10, please contact the M.B.A. program for further information.

Bessie Schulich Fellowship for Entrepreneurship. This fellowship, valued at $3,000, is offered annually to an M.B.A. student who has completed Part I of the program. The fellow, who must be a Canadian citizen or permanent resident, is chosen by the John Molson School of Business. Students must be registered full-time in the program in the year the fellowship is awarded. Candidates must have a minimum GPA of 3.00 and must have demonstrated entrepreneurial skills. For application form and further information please contact the M.B.A. Office. The application deadline is April 10.

Concordia Institute for Canadian Jewish Studies Fellowships. Open to full-time master's and doctoral students in the humanities and the social sciences. Candidates must plan to devote a major portion of their studies to the Canadian Jewish experience(s). The awards are valued between $5,000 and $7,500 depending on the number awarded and are renewable through competition. Selection is made by the Concordia University Institute for Canadian Jewish Studies selection Committee. For application form and deadline date information please contact the Institute at 848-2424 extension 8760.

Dagobert Broh Doctoral Entrance Fellowship. This fellowship is awarded on the basis of academic excellence to an incoming doctoral student in the History Department. It is valued at approximately $12,000 per annum and is non

renewable. Selection is made by the History Department. For further information please contact the History Department. The deadline date for application is February 1st.

Dora Morrow Fellowships for Excellent Achievement in Visual Arts. The purpose of the fellowships is to support students entering the Faculty of Fine Arts' Departments of Studio Arts and Design & Computational Arts to pursue a course of study leading to an M.F.A. - Studio Arts, or a Graduate Certificate in Digital Technologies in Design Art Practice.

The fellowships will be adjudicated by a Studio Arts' Graduate Program Selection Committee and the Design Art's Graduate Program Selection Committee. For application form and deadline date information please contact the appropriate program. The approximate value of each fellowship is $4,400.

France and André Desmarais Graduate Fellowship. The fellowship is valued at approximately $5,000 and is open to full-time new and returning master's and doctoral students in any discipline. The fellowship is administered by the School of Graduate Studies and adjudicated by the Graduate Awards Committee. The deadline date for application is April 10.

J.A. DeSève Entrance Fellowships. These fellowships are granted to full-time students entering the graduate diploma, master's or doctoral level studies at the Faculty of Fine Arts. They are awarded through competition on the basis of academic excellence and any other entrance criteria established by the University, the Faculty and those specific to particular programs. The fellowships are non renewable.

John Molson School of Business Fellowships. The fellowships will be awarded through competition on the basis of academic excellence to full-time students entering the doctoral program. Selection will be made by the JMSB PhD committee. The fellowship is valued at $15,000 per annum for a maximum of three years. For further information and deadline date information please contact the Ph.D. Administration program.

Lord Shaughnessy Master of Business Administration Fellowship in Investment Management. This fellowship is awarded on the basis of financial need and academic standing. Recipient must be a full-time student entering the MBA program in the Goodman Institute of Investment Management of the John Molson School of Business. Students applying for this fellowship must complete a formal and confidential needs assessment. The fellowship is valued at approximately $2,100. For the needs assessment form, deadline date for application and further information please contact the Goodman Institute of Investment Management.

Graduate Awards

Luigi Liberatore Graduate Entrance Fellowship. This fellowship is awarded through competition on the basis of academic merit to a student entering his or her first year of full-time studies leading to an M.A. in Media Studies (in odd years) or a Ph.D. in Communications (in even years) at Concordia. The fellowship is valued at approximately $5,000 and is non renewable. Selection of the recipient is made by the Department of Communication Studies.

Miriam Roland Entrance Fellowships in the Ph.D. Humanities. These fellowships are created through the generosity of Mrs. Miriam Roland, a dedicated member of the Board of Governors and generous supporter of Concordia University. They are to be awarded on the basis of academic excellence to two full-time students entering the Ph.D. Humanities Program. Selection is made by the Humanities Doctoral Committee on the basis of academic excellence and qualified interdisciplinary research proposals. The two fellowships are valued at $5,000 each and are non renewable.

Naïm Mahlab Fellowship. Awarded through competition to a full-time student entering or pursuing master's or doctoral studies at Concordia in the area of anti-semitism and its roots. Selection will be made by the Concordia University Institute for Canadian Jewish Studies adjudicating committee based on academic merit and the research proposal. The fellowship is valued at approximately $5,000 and is renewable once through competition. For application form and deadline date information please contact the Concordia Institute for Canadian Jewish Studies at 848-2424 extension 8760.

Nicolas-Diniacopoulos - BBC Fellowship. Open to full-time master's and doctoral students in the humanities and social sciences who are Canadian citizens or permanent residents, and who are engaged in research that clearly demonstrates the Nicolas-Diniacopoulos - BBC Tapes collection housed in the Concordia Centre for Broadcasting Studies are central to their studies. One fellowship will be awarded each year for the next three years. The fellowship is valued at $8,000, and is renewable through competition. Selection is made by the Dean of Arts and Science on the recommendation of a selection committee and the coordinator of the Nicolas-Diniacopoulos – BBC News Project. For deadline date and application procedure please consult the Concordia Centre for Broadcasting Studies webpage http://ccbs.concordia.ca/.

Noranda Inc. Fellowship in Commerce and Administration. This fellowship is created through the generosity of Noranda Inc. to assist and encourage excellent students who are pursuing graduate studies and research in Concordia's John Molson School of Business. The fellowship is valued at approximately $4,200 and is renewable through competition. Selection is made by a joint committee chaired by the Associate Dean of Graduate Programs and Program Appraisals at J.M.S.B. For application procedure and deadline date inforamtion please contact your program in the John Molson School of Business.

Graduate Awards

Power Corporation of Canada Graduate Fellowships. These fellowships are made possible through an endowment established by the Power Corporation of Canada. They are valued at $5,000 each and are unrestricted as to area of study. The fellowships are open to full-time new and returning master's and doctoral students. They are administered by the School of Graduate Studies, Graduate Awards Office. The deadline date for application is April 10.

Renata Hornstein Graduate Fellowships in Art History. The fellowships are awarded through competition to full-time graduate students enrolled in or planning to enroll in a program of studies leading to either a PhD or M.A. in Art History. Candidates must be Canadian citizens or permanent residents. Selection is made by the Department of Art History. The two fellowships are valued at approximately $2,800 each and are renewable through competition. For application form and deadline date information please contact the Department of Art History.

R. Zarboni Graduate Fellowship. This fellowship was established by Mr. Zarboni to support and encourage top new and continuing graduate students. It is valued at $5,000 per annum and is tenable for one year by a full-time master's or doctoral student. The fellowship is administered by the School of Graduate Studies, Graduate Awards Office. The deadline date for application is April 10.

Roloff Beny Foundation Fellowship in Photography. The fellowship is created through the Roloff Beny Foundation. Mr. Beny, photographer, painter and designer has long been famous for his photography. Numerous awards have been made to him for the outstanding photography and the design concepts of his books, among them the coveted Gold Medal of the Leipzig International Book Fair, two silver medals, the Charles Blanc Medallion of the French Academy, the Order of Canada, and the title "Knight of Mark Twain". Roloff Beny died in March 2004.

The purpose of this fellowship is to support students entering an M.F.A. Studio Arts program specializing in photography, or students who are already enrolled in the program. Candidates will be assessed on the basis of the artistic merit of their project, taking into consideration the fellowship's potential impact on his/her work. The fellowship will be adjudicated by a selection committee, comprised full-time faculty members from the Photography Department. The fellowship is valued at approximately $10,000 and is non renewable. For application form and deadline date information please contact the M.F.A. program.

Romek Hornstein Memorial Fellowships. Awarded to full-time master's and doctoral students whose research area is in the field of Jewish Studies. The purpose of the fellowships is to help students of academic merit and promise who, without such assistance, would be unable to pursue graduate studies at

Concordia. Selection will be made by the Concordia University Institute for Canadian Jewish Studies based on academic merit and financial need. Two fellowships will be awarded annually to one male and one female student. The approximate value of the awards is $2,700 each, they are non renewable. For application form and deadline date information please contact the Concordia Institute for Canadian Jewish Studies at 848-2424 extension 8760.

Scotiabank Fellowships and Awards in Finance (Goodman Institute of Investment Management). The purpose of these fellowships and awards is to encourage and reward excellent students who are pursuing and/or graduating from their studies in the Goodman Institute of Investment Management. They are awarded on the basis of academic excellence to full-time students pursuing and/or graduating from the Goodman Institute of Investment Management. Selection is made by a committee headed by the Director of the Goodman Institute.

Two fellowships will be offered as follows:
1. A $5,000 fellowship will be awarded to the best first year student (highest GPA) and who will have successfully gone through the CFA-1.
2. A $5,000 fellowship will be awarded to the second year student (highest GPA) and who will have successfully gone through the CFA-2.

Two awards will be offered as follows:
1. A $5,000 award will be awarded to the best third year student (highest GPA).
2. A $10,000 award will be awarded to the best overall student (highest GPA) who will have successfully completed the program.

Scotiabank M.Sc. in Administration (Finance Option) Entrance Fellowships. The purpose of these fellowships is to encourage and reward excellent students who are entering the M.Sc. in Administration (Finance Option) program. Selection will be made by the M.Sc. in Administration Admissions Committee on the basis of academic merit as determined by the program admissions criteria. Four fellowships of $5,000 will be awarded to four entering students in the M.Sc. in Administration (Finance Option). The fellowships are non renewable. For further information please contact the M.Sc. Administration program.

Scotiabank MBA Fellowship in Finance. The purpose of this fellowship is to encourage and reward an excellent student entering the second year MBA program who show an interest in Finance. Selection will be made by the MBA Admissions Committee on the basis of academic merit as determined by the program admissions criteria. One fellowship of $5,000 will be offered annually, it is non renewable. For application form and deadline date information please contact the M.B.A. program.

Sony Graduate Fellowship in Communication Studies. Open to new or returning students registered full-time in the M.A. Media Studies program whose research is production-based. The fellowship will be awarded on the basis of academic excellence, is valued at $5,000 and is non renewable. For application form and deadline date information please contact the M.A. Media Studies program.

Stanley Mills Memorial Foundation Fellowships for Excellence in the Visual Arts. These are entrance fellowships awarded to full-time students entering the M.F.A. program in Studio Arts. Recommendations are made by the Studio Arts' Graduate Program Selection Committee, who will act as adjudicators. Selection will be made on the basis of the quality and merit of the application including a review of the applicant's portfolio and statement of intent. The value of the fellowship is $5,000 each and they are non renewable. Deadline date for application is based on the program's admission deadline date.

Scholarships

Ann Kerby Scholarships for Students with Disabilities. The Scholarships are created to honor Ann Kerby and her tireless and active leadership on behalf of disabled students, while she was Director of Advocacy and Support Services at the University. The purpose of this endowment is to award one of each entrance and in-course scholarships to students with a "recognized disability" who are enrolled part-time or full-time studies in any of Concordia University's undergraduate or graduate programs.

Applicants must be registered with the Office of Students with Disabilities and have fulfilled the in-take process and be recognized with chronic disability as defined in the official university policy on disabled services. The selected students must demonstrate above-average scholastic performance. Applications, evaluation criteria and selection process will be coordinated through the Office of Students with Disabilities. The scholarships are valued at $1,500 each and are renewable through competition. For further information and deadline dates please contact the Office of Students with Disabilities. Should there not be sufficient funds to fund two scholarships, the scholarship will alternate between a graduate student in odd years and an undergraduate student in even years. For application form and deadline date information please contact the Office of Students with Disabilities.

Bourse de doctorat en commerce et en administration Humberto Santos. The Doctoral Scholarship is awarded through competition based on academic excellence to a full-time doctoral student in Administration. Candidates must be Canadian citizens or permanent residents. Selection is made by the program admission committee. The value of the scholarship is approximately $12,000 per annum and it is renewable through competition within the student's first

three years of the program. For application form and deadline date information please contact the Ph.D. Administration program.

Bourses d'études supérieures en commerce et en administration Humberto Santos Two DIA/DSA (Diploma in Institutional Administration and the Diploma in Sport Administration) Entrance Scholarship are awarded through competition based on academic excellence to full-time diploma students entering either the DIA or DSA program. Candidates must be Canadian citizens or permanent residents. Selection is made by the program admission committee. The approximate value of each scholarship is $1,500 and they are non renewable. For application form and deadline date information please contact the DIA/DSA program.

Bourses d'études supérieures en littératures francophones. The scholarship will be awarded annually to a high-ranking graduate student entering the M.A. program in Littératures francophones et résonances médiatiques. Selection of the recipient will be made by the Selection Committee based on academic excellence as demonstrated in the candidate's admission application. The scholarship is valued at approximately $500. For further information and deadline date please contact the program.

Bourses annuelles Meloche Monnex. These annual scholarships are divided as follows:

- Scholarships to support participants, registered in the Summer Program administered by the Institute in Management and Community Development, who without these scholarships would be unable to attend. For application forms and deadline date information please contact the Institute.
- Scholarships for students registered full-time in the Diploma in Community Economic Development. For application forms and deadline date information please contact the program.

Bourses Meloche Monnex. These scholarships are funded through an endowment established to support candidates as follows:

- In even years, the funds will be used to support participants attending the Summer Program administered by the Institute in Management and Community Development. For application forms and deadline date information please contact the Institute.
- In odd years, the funds will be used to support students registered full-time in the Diploma in Community Economic Development. For application form and deadline date information please contact the program.

CAE Scholarship in Engineering Excellence. The scholarship was established in 2001 via an endowment to promote excellence in the field of Engineering. CAE is a global leader in the provision of simulation and control technologies and

training solutions for aerospace and defense. Headquartered in Canada, CAE employs more than 7,000 people around the world and generates annual revenues in excess of C$1 billion.

The Endowment provides for one non-renewable graduate scholarship valued at $3,000 to be awarded to a master's student in his/her final year of studies. Selection of the recipient is made by the Faculty of Engineering and Computer Science based on academic excellence with preference being given to those students in the Department of Electrical and Computer Engineering. For application form and deadline date information please contact the Associate Dean Graduate Programs and Research of the Faculty of Engineering and Computer Science.

Campaign for a New Millennium Graduate Scholarships.

- **School of Graduate Studies**
- **Faculty of Arts and Science**

The scholarships are made possible through the generosity of donors to the Campaign for a New Millennium Endowment fund. They are granted though competition to full-time students who are entering or pursuing master's or doctoral level studies at Concordia University. The scholarships are valued at $1,000 each and are renewable once through competition. They are administered by the School of Graduate Studies, Graduate Awards Office.

Campaign for a New Millennium Student Contribution Graduate Scholarships.

- **Faculty of Arts and Science**
- **Faculty of Engineering and Computer Science**
- **Faculty of Fine Arts**
- **John Molson School of Business**

The scholarships are made possible through the generosity of Graduate Students and are intended to support graduate students in their respective faculties/school. They are granted through competition to full-time students who are entering or pursuing master's or doctoral level studies at Concordia University. The scholarships are valued at $1,000 each and are renewable once through competition. They are administered by the School of Graduate Studies, Graduate Awards Office.

The **Canadian Irish Studies Foundation** and Concordia University has established the following scholarships:

- Saint Patrick's Society Graduate Scholarships in Canadian Irish Studies valued at $3,000 and $2,000 respectively;
- City of Montreal Scholarship in Canadian Irish Studies valued at $1,000;
- United Irish Societies of Montreal Scholarship in Canadian Irish Studies valued at $1,000;
- Fr. Thomas Daniel McEntee Scholarship in Canadian Irish Studies valued at $1,000;

- Fr. Shaun Gerard McCarthy Govenlock Scholarship in Canadian Irish Studies valued at $1,000

Full-time or part-time graduate students working on any aspect of Irish Studies are eligible to apply for these scholarships which will be awarded on the basis of academic excellence, in some cases community involvement may also be required. Recipients will be selected by a selection committee composed of representatives of the Centre for Canadian Irish Studies.

For application form and deadline date information please contact the Centre for Canadian Irish Studies at cdnirish@alcor.concordia.ca.

Charles de Kovachich Scholarship. The scholarship is granted through competition, on the basis of academic excellence, to a full-time student registered in the M.B.A., M.Sc. Administration or Ph.D. Administration program in the John Molson School of Business. Preference will be given to students whose area of concentration is Finance. The scholarship is valued at $1,000 and is renewable through competition. Selection is made by a joint committee chaired by the Associate Dean of Graduate Programs, Research and Program Evaluations. For application form and deadline date information please contact the respective programs.

Concordia University Partial Tuition Scholarships for International Students. These scholarships are open to full-time international students registered in a master's or doctoral program. Candidates must be paying the international tuition differential fees in order to eligible for these scholarships. They are valued at $700 per term for a maximum of 3 terms. They are renewable through competition as long as the candidate is paying international tuition fees. They are administered by the School of Graduate Studies, Graduate Awards Office. The deadline date for application is September 30.

Concordia University Shuffle Graduate Scholarship. The shuffle started in 1990 as a university fundraising event for scholarships. Students, Staff and Faculty are encouraged to participate in this annual event. Open to full-time master's and doctoral students in all disciplines. The value of each scholarship is $2,000. They are administered by the School of Graduate Studies and adjudicated by the Graduate Awards Committee.

Copland Family Graduate Scholarship. The scholarship is granted through competition on the basis of academic excellence and demonstrated leadership abilities to a full-time student in either the M.B.A. or M.Sc. in Administration program who has completed or is about to complete at least 24 credits in their program of study. The scholarship will be granted to a student in the M.Sc. Administration program in even years i.e. 2006/2007 and to a student in the M.B.A. program in odd years i.e. 2007/2008. The scholarship is valued at

approximately $1,170 and is non renewable. For application form and deadline date information please contact the appropriate program.

Donald L. Boisvert Scholarship for Gay and Lesbian Studies. Open to all Concordia Undergraduate and Graduate students pursuing academic work in gay and lesbian studies and who are involved as an activist, in gay and lesbian issues. Selection of recipients shall be made by the coordinating committee for the Minor in Interdisciplinary Studies in Sexuality. The scholarship will be awarded to an undergraduate student in odd years and to a graduate student in even years. For application form and deadline date information please contact the Undergraduate Awards Office at (514) 848-2424 extension 7849.

Erika Beaumier Scholarship in Governance. The scholarship is to be awarded though competition on the basis of academic excellence to a student whose area of research is in corporate governance for M.Sc. and PhD students and whose research paper will be in the area of corporate governance for MBA students. Recipients must be full-time students registered in the MBA, M.Sc Administration or PhD Administration in the JMSB. Candidates must be Canadian citizens or Permanent Residents of Canada. The scholarship is valued at $1,000. For application form and deadline date information please contact the appropriate program.

Faculty of Egnineering and Computer Science Graduate Scholarships. These scholarships are awarded through competition, on the basis of academic excellence, to full-time students in a master's or doctoral program in the Faculty of Engineering and Computer Science. The scholarships are valued at $3,000 each and are renewable through competition. For application form and deadline date information please contact your department.

Fondation de Sève Entrance Scholarship. The scholarship was established to support graduate students entering a master's program in Cinema in the Mel Hoppenheim School of Cinema. The selection is made by the Mel Hoppenheim School of Cinema. For further information please contact the department.

Garnet Strong Scholarship. The scholarship is awarded in alternating years between the Department of Biology (odd years) and the Department of Chemistry and Biochemistry (even years). The recipient must be registered full-time in a master's or doctoral program. The selection is made by the Department based on academic excellence. The value is approximately $3,000. For application form and deadline date information please the appropriate department.

Glay Sperling Scholarship. The purpose of this in-course scholarship is to reward academic excellence and encourage students studying in the Faculty of Fine Arts at Concordia. Students must be enrolled in a program within the Faculty of Fine Arts and have successfully completed a first year of study.

Selection is made on the basis of academic excellence. The scholarship will be adjudicated by the Office of the Associate Dean Research and Graduate Studies of the Faculty of Fine Arts. For application form and deadline date information please contact your department or the Office of the Associate Dean.

Harriet & Abe Gold Scholarship Bank. In 2003, Concordia created "The Harriet & Abe Gold Scholarship Bank" as a testament to the philanthropic vision of the Golds. The purpose of the Gold Bank is to incorporate all gifts provided by the Golds for scholarships at the University.

The purpose of the following graduate scholarship endowments is to support excellent and deserving students at Concordia University and to honor the individuals whose names these awards bear. These individuals have made important contributions to their professions and to their communities.

The scholarships, valued at approximately $2,300 each, are granted through competition on the basis of academic excellence and financial need as expressed in the student's statement describing his/her financial situation and explaining how the scholarship will assist him/her. For application form and deadline date information please contact the appropriate department or the Graduate Awards Office.

- The Feige and Sydney Gasco Graduate Scholarship in English (Creative Writing)
- The George Springate Graduate Scholarship in Education (Educational Studies)
- The Jacqueline and Richard Margolese Graduate Scholarship in the Humanities Doctoral Program
- The Judy and Morris Fish Graduate Scholarship in Education
- The Naomi and Humphrey Kassie Graduate Scholarship in Economics
- The Natalie and Harold Brownstein Graduate Scholarship in Creative Arts Therapies (Drama Therapy Option)
- The P. André Gervais Graduate Scholarship in Theological Studies
- The Rhoda and Arthur Rodbell Graduate Scholarship
- The Saul Levenson Graduate Scholarship in Psychology (Entrance Scholarship)
- The Sheila and Irving Maklan Graduate Scholarship in Psychology (Preference to be given to students whose research area is Abnormal Child Development) (Entrance Scholarship)
- The Sheila and Marvyn Kussner Graduate Scholarship

For application forms and further information please contact the department concerned. The deadline date for application is April 10.

Graduate Awards

In addition to the scholarships listed above, the Harriet and Abe Gold Scholarship Bank includes the **Harriet & Abe Gold Entrance Bursaries** (see Bursaries listing below) **and the Bruno J. Pateras Graduate Award in Administration** (see Awards listing below).

Harris and Ann Wetstein Foundation Scholarship. The scholarship is open to all students whose research is in the area of Canadian Jewish Studies. It is awarded through competition and the selection is made by the Concordia Institute for Canadian Jewish Studies. The scholarship is valued at approximately $1,225. For application form and deadline date information please contact the Concordia Institute for Canadian Jewish Studies at 848-8760.

Joyce Melville Memorial Scholarship. The award will be given to a full-time female student in the third year of her Master's of in Fine Arts program. Selection is based on the student's submissions (curriculum vitae, statement of involvement in social and women's issues, and slides) and faculty recommendation. The value of the award is approximately $l,000 and the recipient will be chosen by the Graduate Studio Arts Advisory Committee. For application form and deadline date information please contact the M.F.A. program.

J.P. Zweig Scholarship. It is awarded to a master's or doctoral student pursuing research in the areas of Psychology of Fitness, Exercise Science and/or Behavioral Medicine. Candidates are to be nominated by Faculty members from these areas of research. Selection is made by the Department of Psychology. The scholarship is valued at approximately $350. For application form and deadline date information please contact the Department of Psychology.

Mannadiar Family DIA/DSA Entrance Scholarship. The scholarship is granted through competition on the basis of academic excellence to a full-time student entering the DIA/DSA program at the JMSB. The scholarship is valued at $1,000 and is non renewable. For further information including deadline date, please contact the program.

Mildred Lande and Margot Lande Graduate Scholarship in Photography. The Scholarship is to support a student entering the M.F.A. program in Studio Arts (Photography). It will be adjudicated by the Department's Graduate Program Selection Committee on the basis of quality and merit including a review of the candidate's portfolio, statement of intent and previous studies. The scholarship is valued at approximately $2,100 and is non renewable.

Mireille and Murray Steinberg in-course Scholarship. The scholarship is awarded through competition on the basis of academic excellence to a student entering his or her second year of full-time studies leading to an M.B.A. The scholarship is valued at approximately $1,200 and is non renewable. For

application form and deadline date information please contact the M.B.A. program.

Morrie and Diane Cohen Graduate Scholarship in Art History. The scholarship is awarded through competition to a full-time graduate student registered or planning to register in a program leading to either a Ph.D. or M.A. in Art History. Candidates must be Canadian citizens or permanent residents. Selection is made by the Department of Art History. The scholarship is valued at approximately $1,400 and is renewable through competition. For application form and deadline date information please contact the Department of Art History.

Nancy Hammond MBA Scholarship. The scholarship is granted through competition on the basis of academic excellence to a full-time student registered in the MBA program at the JMSB. The scholarship is valued at $500 and is non renewable. For application form and deadline date information please contact the MBA office.

Nick Herscovics Memorial Scholarship. The scholarship is awarded on the basis of academic excellence to a student pursuing full-time studies in the M.A. in the Teaching of Mathematics program. The value of the scholarship is approximately $1,000. For application form and deadline date information please contact the Department of Mathematics and Statistics.

Paul Primavesi MBA Scholarship. The scholarship is granted through competition on the basis of academic excellence to a full-time student registered in the MBA program at the JMSB. The scholarship is valued at $500 and is non renewable. For application form and deadline date information please contact the MBA office.

Raymond A. Décarie Graduate Scholarship in Commerce & Administration. The scholarship is granted through competition on the basis of academic excellence to a full-time student entering his or her second year of studies in the M.B.A., M.Sc. Administration or Ph.D. Administration programs in the John Molson School of Business. The scholarship is valued at approximately $1,250 and is renewable through competition. Selection is made by a joint committee chaired by the Associate Dean of Graduate Programs, Research and Program Evaluations. For application form and deadline date information please contact the respective program.

Redpath Sugars Graduate Scholarship in Commerce and Administration. The scholarship is granted through competition on the basis of academic excellence to a full-time graduate student in the M.B.A., M.Sc. Administration or Ph.D. Administration programs in the John Molson School of Business. The scholarship is valued at approximately $1,100 and is renewable through competition. Selection is made by a joint committee chaired by the Associate

Dean of Graduate Programs, Research and Program Evaluations at JMSB. For application form and deadline date information please contact the respective program.

Rona and Robert Davis Scholarship. Established to provide an in-course scholarship to a full-time second year master's or doctoral student registered in the Department of Communication Studies. The candidate must have contributed substantially to the life of the Department, have demonstrated academic excellence and a clear financial need. Approximate value of the scholarship is $620. For application form and deadline date information please contact the Department of Communication Studies.

School of Graduate Studies Staff Scholarship. The purpose of this entrance graduate scholarship is to encourage and reward excellence in scholarly activity to a high ranking full-time student starting doctoral studies within the Humanities program and the Special Individualized program (SIP). The scholarship is created through the generosity of the staff of the School of Graduate Studies, whose mission is to provide leadership and support to the university community in its quest for the advancement of knowledge and academic achievement.

The scholarship will be awarded on the basis of academic excellence. The selection will rotate between the Humanities and the S.I.P. programs in alternating years and will be made by the respective program's selection committee chaired by the Graduate Program Director. The scholarship is valued at $1,000 and is non renewable. For further information please contact the respective programs.

Senior Scholarships. The University has established several senior scholarships, open to people 60 years of age or more who enroll in undergraduate degree or graduate degree or diploma programs. One senior scholarship has been designated for a student in graduate studies. These awards are valued at $500 a year, and are tenable for up to four years. A holder of a senior scholarship must enroll full-time in a graduate degree or diploma program. Senior scholarships are awarded on the basis of academic record and an interview. Information on these awards may be obtained at the Financial Aid and Undergraduate Awards Office.

Bursaries

Barry J. Schwartz Memorial Bursary. This bursary is awarded to a master's or doctoral student who has made a significant academic contribution in the field of Judaic Studies. The value of the award is approximately $320 and the recipient is chosen by the Department of Religion. For application form and deadline date information please contact the Department of Religion.

Centre for Continuing Education Bursary. The bursary is to support and encourage students with financial need and good academic standing who are entering or pursuing full-time studies in the Graduate Diploma in Community and Economic Development program. Candidates must be Canadian citizens or permanent residents. The recipient will be selected by a committee convened by the program director. The bursary is valued at $3,000 and is non-renewable. For application form and deadline date information please contact the program.

CUAA John Molson School of Business Alumni Chapter Entrance Bursary. The purpose of the entrance bursary is to support and encourage an undergraduate or graduate student (MBA, M.Sc. or PhD) with financial need and in satisfactory academic standing to pursue their studies. Selection of the bursary recipient will be made by the Associate Dean of Graduate Studies Research and Curriculum at JMSB in even years starting 2006/2007. Candidates must be Canadian citizens or permanent residents. The bursary is valued at $1,000 and is non renewable. For application forms and deadline date information please contact your program.

Harriet and Abe Gold Entrance Bursaries. The bursaries are awarded to the most needy and academically deserving full-time graduate students entering master's or doctoral studies. Candidates must have completed their undergraduate studies in the previous two years. The value of each bursary is $5,000. Nine (9) bursaries are awarded yearly. The deadline date of application is April 10.

Inge Thurm Bursary in Women's or Gender History. The bursary is awarded in odd years (2007 – 2009 etc.) to a master's or doctoral student and to an undergraduate student in even years. Research should be in the areas of either women's or gender history and may be awarded to a full-time or part-time student. The selection is made by the Department of History. The bursary is valued at approximately $400. For application form and deadline date information please contact Department of History.

Mackie Vadacchino and Michel Robert de Massy MBA Bursary. The bursary will be awarded to a full-time student entering their first year in the MBA program. It is awarded based need and academic excellence, to a student who would otherwise be unable to attend the University. Applicants must be Canadian citizens or landed immigrants. The bursary is valued at $2,000 and is non renewable. For the needs assessment form and application deadline date please contact the MBA program.

Selection of the recipient is made on the basis of financial need and academic standing. The MBA program will solicit applicants to submit a needs assessment form.

Maria Teresa Hausmann Bursary. This award is given to a full-time graduate student entering the M.A. Philosophy program. Selection shall be based on financial need and academic merit. The value of the award is approximately $680 and the recipient is chosen by the Department of Philosophy. For application form and deadline date information please contact the Department of Philosophy.

Office of University Advancement & Alumni Relations Bursary. This bursary is created through the generosity of the staff of the Office of University Advancement and Alumni Relations who are involved, in collaboration with the University's internal and external communities, in building and sustaining programs that secure continued financial and material support from the private sector in support of Concordia University's strategic academic priorities. The bursary is awarded to an undergraduate student in odd years (i.e. 2007/08) and to a graduate student in even years (i.e. 2006/07).

Selection is made on the basis of financial need and satisfactory academic standing. Students must have completed one year of full-time or part-time graduate studies and must have demonstrated active community involvement in order to be eligible. In addition to the application, any work for a non-profit organization must be supported by a letter of recommendation from that organization which describes the candidate's volunteer work at the organization.

The bursary is administered by the School of Graduate Studies, Graduate Awards Office. It is valued at approximately $500 and is renewable through competition.

Philip Fisher Bursaries. Awarded to full-time students registered in the Diploma in Journalism program. Selection of the winners is made by the Department of Journalism. The bursaries are valued at $2,000 each. For application form and deadline date information please contact the Department of Journalism.

Susan Carson Memorial Bursary. The bursary is awarded to a full-time student in the Diploma in Journalism program. Selection is made by the Department of Journalism based on academic achievement combined with financial need. Candidates must demonstrate highest ideals, concern for humankind and qualities of citizenship. Preference will be given to students who have custody of one or more dependent children. The bursary is valued at approximately $1,570. For application form and deadline date information please contact the Department of Journalism.

Velan Graduate Entrance Bursary in Painting & Drawing. The bursary is to be granted to a full-time student entering the M.F.A. in Studio Arts (specialization in Painting). The bursary will be adjudicated by the Studio

Arts, Graduate Program Selection Committee and students will be assessed on the basis of financial need and quality, including a review of his or her portfolio and statement of intent. The bursary is valued at $5,000 and is non renewable.

Selection of the recipient is made on the basis of financial need and academic standing. The M.F.A. program will solicit applicants to submit a needs assessment form.

van Berkom & Associates Inc. Bursary. The bursary is awarded to a full-time student entering his or her second year of the M.B.A., the M.Sc. Administration Program in Finance or the Master in Investment Management program. Preference will be given to students pursuing a concentration in Finance and who wish to pursue a career in investment Management. The bursary is awarded based on economic need and good academic standing to a student who would otherwise be unable to attend the University. The value of the award is $3,000 and it is non renewable Selection is made by a joint committee chaired by the Associate Dean of Graduate Programs, Research and Program Evaluations at the JMSB. For application form and deadline date information please contact the respective departments.

Awards

Administrative Management Society John Crawford Award. It is awarded to a full-time master's or doctoral student in the Department of Education. The selection of the winner is made by the Department based on academic merit. The value of the award is approximately $330. For application form and deadline date information please contact the Department of Education.

Andrew Murphy Graduate Award in Special Education. It is awarded on the basis of academic excellence to a full-time student whose course of study is in the field of Special Education. Preference may be given to students who themselves have benefited from Special Education programs and who are continuing to study in this field at the graduate level. The award is open to students enrolled in or planning to enroll in the M.A. Educational Technology, M.A. Educational Studies, M.A. Child Studies or Ph.D. Educational Technology. The selection is made by the Department of Education. The award is valued at approximately $3,000. For application form and deadline date information please contact the Department of Education.

Avtar Pall Graduate Award in Earthquake Engineering. Awarded to a full-time student registered in a master's or doctoral program in the Department of Building, Civil and Environmental Engineering. The recipient's area of research must fall under earthquake engineering, structural engineering, and/or oblique structural engineering. The selection of the winner is made by the Department of Building, Civil and Environmental Engineering based on

academic merit. The value of the award is $1,000, renewable twice through competition. For application form and deadline date information please contact the Department of Building, Civil and Environmental Engineering.

Bruno J. Pateras Graduate Award in Administration. Candidates must be Canadian citizens or Permanent Residents of Canada. They may be registered full-time or part-time in the DIA program and must have completed at least 24 credits of their program and have maintained a minimum GPA of 3.30.

The internship will be undertaken in accordance with the DIA Internship Guidelines. The project will be developed and declared annually by the Director of the Art Gallery. The recipient will complete an internship of no less than three (3) months at Concordia's Leonard and Bina Ellen Art Gallery which is devoted to the research, collection and interpretation of Canadian art.

The value of the internship is approximately $2,500. The recipient will be selected on the basis of a joint recommendation of the Director of the Art Gallery and the Director of the DIA/DSA program. For application form and deadline date please contact the DIA program.

Campaign for Concordia Graduate Awards. They are awarded based on academic excellence to students entering or pursuing full-time master's or doctoral studies at Concordia University. Approximately 9 awards are offered valued at $5,000 each and they are renewable through competition. The awards are administered by the School of Graduate Studies, Graduate Awards Office. Deadline date of application is April 10.

Canada Steamship Lines Award in Transportation. Awarded through competition to a full-time student in a master's or doctoral program whose primary area of research concerns transportation. Research focus would be demonstrated by a curriculum vitae and a thesis proposal with supporting documentation, including letters of recommendation from thesis committee members. The award is adjudicated by a committee convened by the School of Graduate Studies. The award is valued at approximately $1,200 and is renewable through competition. For application form and deadline date information please contact the Graduate Awards Office.

Canadian National Award in Transportation Studies. Awarded through competition to a full-time student in a maser's or doctoral program whose primary area of research concerns transportation. Research focus would be demonstrated by a curriculum vitae and a thesis proposal with supporting documentation, including letters of recommendation from thesis committee members. The award is adjudicated by a committee convened by the School of Graduate Studies. The award is valued at approximately $2,500 and is

renewable through competition. For application form and deadline date information please contact the Graduate Awards Office.

Clarence Bayne Internship Award. The award is created to support an excellent student in the DIA/DSA program during the mandatory internship required as part of their program. Applicants must be Canadian citizens or permanent residents. The recipient shall be entering his/her second year of the program and enrolled in their internship. The award is valued at $500 and is non renewable. For application form and deadline date information please contact the program.

Commerce Graduate Students' Association – CGSA Award. The award is open to full-time and part-time students having a minimum cumulative GPA of 3.40 and having completed a minimum of 24 credits in their graduate program. All the executive members of the CGSA, except the program representatives, are not eligible. The selection is made in the spring by a committee established by CGSA and the JMSB based on the applicant's contribution to the commerce graduate students life*. The award administered by the School of Graduate Studies. The value of the award is $1,000 and it is renewable through competition. For information, application form and deadline date please contact the Commerce Graduate Students' Association.

*Contributing to the Commerce graduate student's life can be in different ways such as: actively seeking to promote JMSB, introducing new social and academic events, actively participating in current events, introducing ideas that will enhance the students' experience at JMSB.

Concordia University Retired Faculty and Staff Graduate Awards. Candidates must be Canadian citizens or permanent residents and must have completed one year of full-time master's or doctoral studies at Concordia University. Recipients will be selected on the basis of financial need determined through a confidential, standardized financial needs test. The School of Graduate Studies will administer the awards. There are four awards valued at approximately $4,150 each, they are renewable through competition. For application form and deadline date information please contact the Graduate Awards Office of the School of Graduate Studies.

Dick McDonald Award. The purpose of this endowment is to provide an award to a graduate student entering the second year of the Human Systems Intervention M.A. program. The award is valued at approximately $500. For application form and deadline date information please contact the Department of Applied Human Sciences.

Hydro Québec Graduate Awards. The six (6) awards are granted through competition to full-time students who are entering or pursuing master's or doctoral level studies at Concordia University. They are valued at $5,000 and

are renewable once through competition. The School of Graduate Studies, Graduate Awards Office administers the award.

International Congress of Historical Sciences Award. It is awarded every five (5) years to a doctoral student or postdoctoral fellow in the Department of History at Concordia. This award is to defray the costs of attending the conference. The next award will offered in 2010.

James W. Burns Graduate Award. It is awarded to a full-time master's or doctoral student based on academic merit. The award is valued at approximately $2,400. The School of Graduate Studies, Graduate Awards Office administers the award.

Keith Lowther Graduate Award. Awarded on the basis of academic excellence and community service to a full-time student registered in a graduate or post-graduate program in the Department of History. The award is valued at approximately $500. For application form and deadline date information please contact the Department of History.

Michael Murray MBA Entrance Award. The award is given to a full-time student entering their first year in the MBA program. Selection of the award recipient will be made by the MBA admissions committee on the basis of academic excellence. The award is valued at $2,000 and is non renewable. For deadline date information please contact the MBA program.

Mike Rakmil Award. It is awarded every second year (even years) to a full-time graduate student entering the Master of/Magisteriate in Fine Arts. It is a two year award valued at $2,500 per annum. Selection is made by the Graduate Studio Arts Committee from qualified applicants to the program. The next time this award will be made will be for the 2006/2007 academic year.

Miriam J. Roland Bursary. The purpose of the bursary is to support a graduate student registered full-time in the Graduate Diploma Program in Community Economic Development. Selection of the recipients will be made on the basis of financial need and academic standing. The value of the bursary is dependent on the endowment payout and is non renewable. For application form and deadline date information please contact the School of Community and Public Affairs.

Nathalie Le Prohon Entrance MBA Award. The purpose of the award is to encourage a full-time student entering the MBA program to excel at balancing work, study and community involvement while maintaining a good academic performance. The award is given to a full-time student entering their first year in the MBA program. Candidates must be Canadian citizens or landed immigrants.

Selection of the award recipient will be made by the MBA admissions committee on the basis of academic performance and on leadership in extra curricular activities. The applicant shall provide a one-page essay on how well he/she is able to balance work, study and community involvement. The award is valued at $2,000 is non renewable. For further information and application deadline date please contact the MBA program.

Omer DeSerres Graduate Award for Excellence in Visual Arts. The award is created through the generosity of Mr. Marc DeSerres, President of Omer DeSerres, a leading supplier of art materials in Canada, and Chair of the Concordia Fine Arts Advancement Committee. It is granted to a full-time student entering the MFA in Studio Arts. The Studio Arts' Graduate Program Selection Committee will adjudicate the award based on the quality and merit of the candidate's application, portfolio and statement of intent. The award is valued at $3,000 and is non renewable.

Philip Cohen Award. The Philip Cohen Award was established in honor of Philip Cohen who designed, initiated and directed the first programs of music and music related studies at Concordia University. The award is granted annually to an outstanding instrumental performer registered as a full-time graduate student in an interdisciplinary master's or doctoral program. In addition to his or her musical accomplishments, the recipient will normally demonstrate high academic potential in one or more disciplines outside of music.

Port of Montreal Award in Transportation Studies. This award is granted through competition to a full-time student in a master's or doctoral program whose primary area of research concerns transportation. Research focus would be demonstrated by curriculum vitae, thesis proposal and letters of recommendation from the thesis committee members. The award is adjudicated by a committee convened by the School of Graduate Studies. The award is valued at approximately $1,700 and is renewable through competition. For application form and deadline date information please contact the Graduate Awards Office.

Robert J. Briscoe M.B.A. Award. Awarded to a full-time graduate student in the second year of their M.B.A. program and whose undergraduate degree was not in commerce. Selection will be made by the M.B.A. program based on academic excellence. Preference will be given to those who can demonstrate entrepreneurial activity. The approximate value of the award is $2,500. For application form and deadline date information please contact the M.B.A. program.

Rose and Norman Goldberg Award of National Council of Jewish Women. This award is made every even year (2006/08/10) to a student registered full-time in the M.A. Philosophy program. It is awarded on the basis of financial need and

the student's performance in the program. The value of the award is approximately $500 and the recipient is chosen by the Department of Philosophy. For application form and deadline date information please contact the Department of Philosophy.

Susan Schouten Documentary Film Award. The award is to be granted on the basis of competition to a full-time student, who is registered in an M.F.A. in Film Production, or a Bachelors in Fine Arts (BFA), Major or Specialization in Film Production. Students' studio work will be assessed on the basis of creativity, quality and merit of a completed documentary film that reflects the social justice concerns at the heart of Susan Schouten's documentary film philosophy: aboriginal issues, women's issues, poverty and class struggle. Candidates will be nominated by the head of the MFA Film Production program at the graduate level and the instructor of the documentary stream of Filmmaking II at the undergraduate level. The Undergraduate Awards Division of the Financial Aid Office will administer the award.

W.Tschernomor DIA/DSA Internship Award. The purpose of this annual award is to reward and support an excellent student in the DIA/DSA program during their internship period required by the program. Candidates must be Canadian citizens or permanent residents in the internship stage of his/her program. Application consists of: the application form, a c.v., statement of purpose, transcripts and a one-page essay on his/her outstanding contribution and involvement in the community. The award is valued at $1,000 and is non renewable. For application form and deadline date information please contact the program.

Wynne Francis Award. The award will be given to a master's student in English for a critical essay on Canadian Poetry. The submissions may deal with any aspect of Canadian poetry, including such perspectives as biography; ethnic, regionalist, feminist or comparative studies; textual analysis or literary theory; or any relevant approach deemed appropriate by the awards committee of the English Department. Essays written for graduate courses, as well as chapters or sections of an M.A. thesis, are eligible. The value of the award is approximately $1,600 and the recipient is chosen by the English Department.

Grants

Loyola Alumni Association Inc. Educational Grants. They are awarded to full-time Concordia students at all levels. Preference will be given to children and grand-children of active Loyola Alumni Association Members. Selection will be made by the Association.

Research Stipends

Dagobert Broh Graduate Research Stipend. The stipend will be awarded annually to a student in History who has been admitted to candidacy for the Ph.D. and who exhibits both need and a sound research project. In the absence of a suitable candidate at the doctoral level, M.A. applicants will be considered. The stipend is valued at approximately $3,000. For further information please consult the History Department.

Teaching Assistantships

Carolyn and Richard Renaud Graduate Teaching Assistantships. These Teaching Assistantships are open to new and returning full-time graduate students in all master's and doctoral programs. Selection is made by the School of Graduate Studies based on academic merit, financial need and the program recommendation. Approximately eleven Teaching Assistantships awarded annually at a value of $5,000 each including benefits. The School of Graduate Studies, Graduate Awards Office administers the teaching assistantships. They are renewable through competition.

Graduation Awards

David McKeen Awards for Literary Interpretation and Creative Writing. The awards will be awarded for the best academic and creative writing of students who have received their master's degree during an academic year. They are awarded in the September following the academic year. The awards are valued at approximately $400 each and the selection is made by the Department of English.

Ragai Ibrahim Graduate Award in Biology. The award is granted through competition on the basis of academic excellence to a graduating student with a master or doctoral degree in biology. The award recipient will be selected by the Biology Graduate Studies Committee in consultation with the Department Chair. The award is valued at $850 and will be awarded in the fall of every year.

Assistantships

Graduate Assistantships. Many departments in the University offer salaries for teaching assistance, demonstrating, marking, or assistance with research projects. The amount of salary paid varies from one department to another and depends on the type and amount of work involved, as well as on the source of funds, which may be a research grant from an external agency in the case of a research assistantship. Students interested in such positions should inquire from the department or Faculty concerned, usually no later than March.

Provincial and Federal Granting Agencies Scholarships and Fellowships

Fonds Québécois de la recherche sur la nature et les technologies (FQRNT). Residents of Quebec, as defined by the agency, who are Canadian citizens or permanent residents intending to study full-time in a master's or doctoral program in the areas of engineering or the pure and applied sciences are eligible to apply for scholarships from this agency. These scholarships are granted on the basis of a variety of factors, with scholastic achievement criteria and proposed research being the most important. The Fonds FQRNT also offers specialized scholarships to individuals in particular fields such as transportation, energy and others. For application deadline date please consult their website (it is normally around October 12th). For more details on their eligibility requirements, information and application form please visit their website at http://www.fqrnt.gouv.qc.ca.

Fonds Québécois de la recherche sur la société et la culture (FQRSC). Residents of Quebec, as defined by the agency, who are Canadian citizens or permanent residents intending to study full-time in a research master's or doctoral program in the areas of social sciences, humanities, fine arts or commerce are eligible to apply for scholarships from this agency. These scholarships are granted on the basis of a variety of factor, with scholastic achievement criteria and proposed research being the most important. For application deadline date please consult their website (it is normally around October 12th). For more details on their eligibility requirements, information and application form please visit their website at http://www.fqrsc.gouv.qc.ca.

Fonds de recherche en santé du Québec (FRSQ). Residents of Quebec, as defined by the agency, who are Canadian citizens or permanent residents intending to study full-time in a maser's or doctoral program whose research is in the area of the health sciences are eligible to apply for scholarships from this agency. These scholarships are granted on the basis of a variety of factor, with scholastic achievement criteria and proposed research being the most important. For application deadline date please consult their website (it is normally around October 15th). For more details on their eligibility requirements, information and application form please visit their website at http://www.frsq.gouv.qc.ca.

Natural Sciences and Engineering Research Council (NSERC). The Natural Sciences and Engineering Research Council offers a number of postgraduate awards to assist students in undertaking master's or doctoral study and research, and a limited number of postdoctoral fellowships for those wishing to add to their experience by specialized training. These scholarships and fellowships are awarded on the basis of high scholastic achievement, and evidence of capacity to do research. These may be granted for study and research in such fields as agriculture, biology, chemistry, physics, geology,

physical geography, mathematics, engineering, computer science and experimental psychology. For postgraduate scholarships, the applicant must be either a Canadian citizen, or a permanent resident residing in Canada at the time of application. For more details on their eligibility requirements, information, application forms and deadline dates please visit their website at http://www.nserc.ca. For students applying and who are registered at Concordia the deadline date is normally around October 10th, please contact the Graduate Awards Office of the School of Graduate Studies or the School of Graduate Studies website for the exact date.

Social Sciences and Humanities Research Council (SSHRC). The Social Sciences and Humanities Research Council offers fellowships and grants in the social sciences and humanities. Some of the programs of assistance available are: Master's Canada Graduate Scholarships, Doctoral Fellowships and Doctoral Canada Graduate Scholarships, and Postdoctoral Fellowships. Applicants must be either a Canadian citizen, or a permanent resident residing in Canada at the time of application. For more details on their eligibility requirements, information, application form and deadline dates please visit their website at http://www.sshr.ca. For students applying and who are registered at Concordia the deadline date is normally around October 24th, please contact the Graduate Awards Office of the School of Graduate Studies or the School of Graduate Studies website for the exact date.

Canadian Institute for Health Research (CIHR). The Canadian Institute for Health Research offers research awards to students whose research is in the field of health sciences. Some programs of assistance are the Master's Canada Graduate Scholarships, the Doctoral research awards and Postdoctoral Fellowships. Applicants must be either Canadian citizen or a permanent resident residing in Canada at the time of application. For more details on their eligibility requirements, information and application form and deadlines dates please visit their website at http://www.cihr-irsc.gc.ca.

Graduate Registration

On-line Registration

Tuition and other fees are automatically assessed and charged to the student's account. The Student Accounts Office does not issue a statement of account each month. **All fees must be paid when they become due**. Interest will be charged monthly whether or not the student has received a Statement of Account. Student account information, amounts, and dates when payment is due can be obtained from the student portal at http://www.myconcordia.ca.

Students can also access information on their personal class schedule, current course grades, student record, statement of account, loans and bursaries, personal book list, code permanent status and registration dates; students may also make address changes and email address changes.

Continuing In Program Registrations
(for students in master's or doctoral programs)
After a student's first registration has been processed, the system will automatically register master and doctoral students when they are not otherwise registered in academic courses. Students who are still within their program time limit and are not otherwise registered in course credits, will be registered in "Continuing in Program" (CIP 001/1, 001/2 or 001/4). This registration is an academic notation and not a registration for academic credit. This registration/notation will not generate the assessment of any fee.

If courses are not taken during the first term of admission, a CIP notation requires approval of the School of Graduate Studies. After that, the system will dynamically register the student in CIP when they are not otherwise registered in academic course credits.

The notation on the student record will show Continuing in Program (CIP) or Time Limit Extension (TLE) respectively. This automatic process will commence approximately one month prior to the start of each term. Should a student subsequently register for courses, the automatic CIP will be removed.

Automatic registrations will occur for returning students only if there are no restrictions on record (i.e., academic, financial, expired time limits, etc.). Students will be withdrawn from their program if the automatic registration cannot be processed each term. See withdrawal deadlines under **Withdrawal from Program** section.

Any outstanding admission, immigration documents or unpaid accounts will result in a block on future term registrations, and ultimately the student will be

withdrawn from the program. Please refer to section on **Re-Entry of Withdrawn Students.**

Time Limit Extension Registrations
(for students in master's or doctoral programs)
Students who have exceeded their time limit and have been granted a limit extension will automatically be registered in "Time Limit Extension" (TLE) by the system until they have reached their program time limit extension.

Inter-University Agreement
Students should refer to the CREPUQ website at http://www.crepuq.qc.ca for detailed information. Québec universities have agreed to permit the transfer of academic credits between them up to a maximum of 6 credits in any one year. In exceptional cases, a student may be authorized to take up to 12 credits at another university. The agreement normally covers only graduate students, and is intended to include only those courses not given at the home university which fit a student's program requirements. Authorization for a graduate student to cross-register must be given by the student's Graduate Program Director, the Dean of Graduate Studies, and the Office of the Registrar. This agreement in no way interferes with the right of the host university to accept or refuse, as it sees fit, registration of a student from another university in any of the courses or programs which it offers. When attending the host university, the student is subject to its regulations.

The grades achieved at other institutions for courses taken under the Inter-University Agreement will be recorded on Concordia records and transcripts using a conversion table that is available at the Birks Student Service Centre, Office of the Registrar. These grades will be included in the calculation of grade point averages in the same manner as any grade achieved in a course taken at Concordia, with the exception of transfer credits.

Withdrawal from Courses

Students who wish to withdraw from a course(s) should contact their Graduate Program Director. Withdrawal from a course(s) can be a "Did not Enter" (DNE) or a "Discontinue" (DISC). When a student DNEs a course(s), it will be removed from the student's official transcript. A withdrawal from a course(s) (DISC) appears on the official transcript next to the courses(s) in question. See the *Academic Calendar* on page ix for DNE and DISC deadlines. These deadlines shall apply for all courses taken by graduate students in their graduate program or as independent graduate students. See the Undergraduate Calendar for the dates applicable to courses taken as Qualifying Program or independent undergraduate students.

Failure to comply with the DISC withdrawal requirement results in the courses in question being graded *Fail* or *Fail/Absent*.

Students should refer to the section on Withdrawals and Refunds in the ***Financial Regulations*** on page 760.

Withdrawal from Program

Students who withdraw from their program or from the University by the DNE deadline are required to notify the Office of the Registrar, and to give reasons for withdrawing. Forms are available for this purpose from the student's Graduate Program Director. After the DNE deadline, withdrawal is processed at the end of the current term and courses on record will be discontinued if submitted prior to the academic withdrawal deadline.

Graduate students will be withdrawn from their program if course registration cannot be processed. See the *Academic Calendar* on page ix for DNE and DISC deadlines.

Graduate students in Diploma and Graduate Certificate programs will be withdrawn from their program once their time limit has expired.

Late Registration

Students incur a late registration fee of $25.00 when they register on or after the date that classes officially begin across the University. For the balance of the month in which classes begin, approval to register late must first be obtained from the Graduate Program Director. After the first month of classes, late registration is allowed only in special circumstances, with the approval of the Graduate Program Director and the Dean of Graduate Studies. Student Request Forms for late registrations must be supported by appropriate documentation.

Academic Regulations

The Calendar is an official University document defining academic programs and the regulations which pertain to them. It is accurate as of its printing date. The University Senate reserves the right to modify the academic programs and regulations at its discretion after the publication date of the Calendar. In addition, the University reserves the right to modify the published scale of tuition and other student fees at any time before the beginning of an academic term. The most current information is available from the School of Graduate Studies for graduate programs and Enrolment Services. Moreover, the information contained in the Calendar or any other University document related to academic programs and regulations, is subject to verification and correction by the School of Graduate Studies and Enrolment Services.

Academic Year
The academic year begins with a Summer Session (May to August) followed by a Regular Session (September to April).

Summer Session:
The Summer Session covers all courses offered between the beginning of May and the end of August.

Regular Session:
The Regular Session is divided into a Fall Term (September to December) and a Winter Term (January to April), each of 15 weeks' duration, including an examination period. The Academic Calendar at the beginning of this publication contains precise dates for the beginning and end of classes.

Residence

Minimum Residence for Doctoral Degrees. The minimum residence requirement for a doctoral degree is 6 terms (two years) of full-time graduate study beyond the master's degree, or the equivalent in part-time study, or 9 terms (3 years) of full-time graduate study beyond the bachelor's degree for those students who are permitted to enroll for doctoral studies without completing a master's degree. It should be understood that this is a minimum requirement, and that a longer period may be necessary in order to complete all the work that is required for the degree. In special circumstances, departments may permit or require candidates to spend a period of time in residence at another institution, subject to the approval the School of Graduate Studies in each case. When such arrangements are made, it is understood that the candidate will be engaged in full-time study, and that the institution will be able to provide appropriate supervision and research facilities. In all cases, candidates for a doctoral degree from Concordia University must complete at least two years of graduate

study at this university, including the final year of the required residence period.

Minimum Residence for Master's Degrees. The minimum residence requirement for the master's degree is 3 terms (one year) of full-time study, or the equivalent in part-time study. This requirement must be met regardless of the amount of graduate work previously completed in any other program or at any other university. Certain master's programs require longer periods of minimum residence.

Beyond Program Requirements. Courses which are completed, but not counted towards a degree or diploma, may be identified on the record as *Beyond Program Requirements Extra Credits.*

Time Limits

Students who exceed the time limit as outlined below will be withdrawn from their program. Under exceptional circumstances a time limit may be extended upon the recommendation of the Graduate Program Committee and the approval of the Dean of Graduate Studies.

Time Limits for Doctoral Degrees. All work for a doctoral degree must be completed within 18 terms (6 years) of full-time study or 24 terms (8 years) of part-time study from the time of original registration in the program.

Time Limits for Master's/Magisteriate Degrees. All work for a master's/ magisteriate degree for full-time students must be completed within 12 terms (4 years) from the time of initial registration in the program at Concordia University; for part-time students the time limit is 15 terms (5 years). In the case of the M.B.A. (Investment Management Option) and the Master in Investment Management programs, the time limit for full-time students is 15 terms (5 years). In the case of the M.B.A., the time limit for full-time students is 9 terms (3 years). In the case of the E.M.B.A. and the A.M.B.A., the time limit for full-time students is 6 terms (2 years).

Time Limits for Diploma Programs. All work for a diploma program must be completed within 6 terms (2 years) from the time of initial registration in the program for full-time students; for part-time students the time limit is 12 terms (4 years). In the case of the Diploma in Investment Management program, the time limit for full-time students is 12 terms (4 years).

Time Limits for Graduate Certificate Programs. All work for a graduate certificate program must be completed within 6 terms (2 years) from the time of initial registration in the program for full-time students; for part-time students the time limit is 12 terms (4 years). In the case of the graduate certificate in e-business and the graduate certificate in Management Accounting, the time limit is 9 terms (3 years).

Academic Standing

The academic progress of graduate students is monitored on a periodic basis. To be permitted to continue in the program, students in doctoral and master's programs must maintain a cumulative Grade Point Average (GPA) of at least 3.00 based on a minimum of 12 credits. Students whose GPA falls below 3.00 are considered to be on academic probation during the following review period. Students whose GPA falls below 3.00 for two consecutive review periods are withdrawn from the program. Individual programs may have more stringent GPA regulations; students should check their program's calendar entry or with the Graduate Program Director.

Students in graduate diploma and graduate certificate programs must maintain a minimum GPA of 2.70 during their program of study in order to be considered a student in good standing. Students whose GPA falls below 2.70 are considered to be on academic probation during the following review period. Students whose GPA falls below 2.70 for two consecutive review periods are withdrawn from the program. Individual programs may have more stringent GPA regulations; students should check their program's calendar entry or with the Graduate Program Director.

Students in qualifying programs or concurrent qualifying programs will be assigned a grade in accordance with the undergraduate grading system. The School of Graduate Studies' requirement of a minimum of a *B* grade is required in order to ensure that the minimum standards of the graduate grading system are maintained. In addition, students must meet specific program requirements for good academic standing. A grade of *C-* or below will be considered a failing grade and in such cases students will be required to withdraw from the degree or diploma program for which these courses are prerequisite.

C Rule
Graduate students who receive more than one C grade during the course of their studies will normally be withdrawn from the program. The MBA and M.Sc. in Administration programs apply a term-by-term GPA requirement. Students should refer to the section on Academic Standing in the MBA program entry. Students who have been withdrawn may appeal for re-admission. Students who receive another C after re-admission will be withdrawn from the program and will not be considered for re-admission. Individual programs may have more stringent regulations; students should check their program's entry or with the Graduate Program Director.

F Rule
Graduate students who receive a failing grade in the course of their studies will be withdrawn from the program unless continuation in the program is requested by the student's program or Faculty and approved by the Dean of Graduate Studies. If withdrawn from program, students may apply for re-admission.

Students who receive another failing grade after re-admission will be withdrawn from the program.

G.P.A. Graduation Requirement
In order to graduate, students in doctoral and master's programs must have a cumulative GPA of at least 3.00. Students in diploma and graduate certificate programs must have a cumulative GPA of at least 2.70 in order to graduate. Individual programs may have more stringent regulations; students should check their program's entry or with the Graduate Program Director.

Graduation Application
Degree, diploma, and certificate candidates who expect to complete their program requirements in a particular term must *apply to graduate*. Forms are available in the Birks Student's Service Centre in the Office of the Registrar. The forms should be completed by **January 15** for spring graduation and **July 15** for fall graduation.

Note: In programs requiring a master's or doctoral thesis, there are deadlines for thesis submission which must be met if a student is to graduate at a particular graduation. These deadlines are outlined in the *Academic Calendar*, page ix.

Credit System

Concordia University has adopted a system of assigning credits to the components of its graduate programs. This system was recommended by the Québec Council of Universities for implementation in all the universities of the Province of Québec. The fundamental concepts in this system are defined in the Rapport du Conseil des Universités sur les Diplômes Universitaires. The credit base takes into account the total activity of the student in terms of lectures, seminars, conferences, laboratories, studio or practice periods, practica, and research, including, where appropriate, the number of hours of personal work required, as estimated by the university. A credit is considered to represent a minimum of 45 hours devoted by the student to an educational activity as described above.

Language of Instruction

While the language of instruction in Concordia University is normally English, students have the right to write their assignments and examinations in French. It must be understood, however, that in a case where a professor cannot read French, the assignments and examinations must be read by another professor, with possible disadvantages and delays for the student. Students are advised to enquire of the instructor at the beginning of the course whether assignments and examinations written in French will be read personally by the professor.

Notwithstanding the above, language and literature departments may require assignments and examinations to be written in the language being studied.

Grading System

The grades and other notations described and defined in this section are those used for the evaluation of graduate courses and certain other graduate degree and diploma components. Some programs have academic regulations supplementing these definitions and descriptions. Such additional regulations define what is required in terms of grades for a student to be considered *in good standing* in a program. Please see the relevant program section of this calendar and, where the academic regulations for a program have not been stated, consult the Graduate Program Director. Grades used for graduate courses or courses taken as part of a graduate program are *A+*, *A*, *A-*, *B+*, *B*, *B-*, *C*, *Pass*, *Fail*, *Fail/Absent*, *Audit* and *In Progress*.

The weight accorded to the various elements of the performance of each student is at the discretion of the instructor or instructors responsible for the course. At the beginning of a course the instructor will provide students with the evaluation scheme in writing. The scheme cannot be altered without appropriate notice.

1. Each doctoral and master's program has a rule which limits the number of *C* grades a student may obtain, and still meet the degree requirements. Diploma and Certificate programs also limit the number of *C* grades a student may obtain. (See **C Rule** on page 63).

2. *Fail* describes work below the acceptable standard in a course. When a student receives a *Fail* or a *Fail/Absent* grade in any course taken as part of a graduate program, it is the responsibility of the department or Faculty to recommend to the School of Graduate Studies whether or not the student should be permitted to re-apply to the program.

3. *Fail/Absent* is used when the instructor at the end of the course has not received the required work and has not granted an extension of the deadline. It is a permanent grade.

4. Using the grade point equivalents listed below, *grade point averages* are calculated and used to measure academic achievement: *A+* = 4.3, *A* = 4.0, *A-* = 3.7, *B+* = 3.3, *B* = 3.0, *B-* = 2.7, *C* = 2, *Fail* = 0, and *Fail/Absent* = 0.

5. *Audit* is the grade assigned to courses that are not taken for credit and which do not count towards the completion of a program. A course taken for this grade must be so designated at the beginning of the term. Students may audit a graduate course with permission of the Graduate Program Director of the program in which the course is offered, once the director is satisfied

that the student is qualified to take the course. Auditing students are expected to attend class, but are not required to complete assignments or write examinations.

6. *In Progress (IP)* is used when the work of a student in a course extends past the time for reporting grades. The IP designation will be changed to *A+*, *A*, *A-*, *B+*, *B*, *B-*, *C*, *Fail* or *F/Abs* if required work is completed by the deadline assigned by the instructor. In all other cases, the grade will be changed automatically to *Fail*. This grade may be assigned only to individual students, not to entire classes. Students must complete courses with In Progress grades by the deadline set by the instructor. The instructor will notify the student of the deadline in writing, but may not set a deadline later than the following dates:
   a. for fall one-term courses: April 1
   b. for winter one-term courses: August 1
   c. for fall-winter two-term courses: August 1
   d. for summer term courses: November 1.

7. *Accepted or Rejected* is the final grade given to a thesis or thesis-equivalent.

8. *Pass or Fail* is the final grade normally given to comprehensive examinations, internships and language proficiency examinations. Students who receive a *Fail* grade in a comprehensive examination may be permitted to sit for a second examination. Students who receive a *Fail* grade in a language proficiency examination may be permitted to make no more than two further attempts to satisfy the requirement.

Note: Grade changes cannot be processed if the student has an outstanding tuition balance.

In addition, the following are notations which are not grades:
1. *Pending* is used when a grade has not been reported at the time of production of a transcript.

2. *Disc* is used to indicate that the student withdrew from the course in question before the withdrawal deadline. Discontinued courses and notations are recorded on official transcripts.

3. *No-Cr* (No Credit) indicates that a student has not fulfilled the requirements of the course. This notation is limited to professional programs which require final accreditation from an outside body. A student receiving a No-Cr notation must repeat the course in the next semester in which the course is offered. Any student may receive only one No-Cr notation for any particular course and may receive no more than two No-Cr notations during their program.

4. *Medical (MED)* is used on students' records to indicate that long-term illness has rendered it not possible for the student in question to complete the academic requirements of a given course or activity. It is a permanent notation; it has no grade point equivalent.

Supplemental Examinations
Graduate students are not permitted to write supplemental examinations.

Comprehensive Examinations
Comprehensive examinations are under the auspices of individual programs and students are advised to consult with their Graduate Program Director concerning program regulations. They are graded as pass or fail. While the School of Graduate Studies' general regulations permit a student to write comprehensive examinations a second time, individual programs may have a more stringent regulation in this regard (i.e., not permitting a second writing) and students should verify this with the program.
Unless expressly permitted by the instructor, the possession of electronic communication devices is prohibited during examinations.

Programs and Fields of Advanced Study

The Calendar is an official University document defining academic programs and the regulations which pertain to them. It is accurate as of its printing date. The University Senate reserves the right to modify the academic programs and regulations at its discretion after the publication date of the Calendar. In addition, the University reserves the right to modify the published scale of tuition and other student fees at any time before the beginning of the upcoming academic year. The most current information is available from the School of Graduate Studies or the Enrolment Services. Moreover, the information contained in the Calendar or any other University document related to academic programs and regulations is subject to verification and correction by the School of Graduate Studies and Enrolment Services.

The Program Repertoire

The graduate programs offered by the University divide into doctoral, master's, diploma and certificate programs. Doctoral programs offer students the opportunity to carry out fundamental and applied research. The results of this research must be presented in the form of a thesis containing an original contribution to knowledge. Doctoral theses must be defended in public examinations. The length and specific format of a doctoral thesis is discipline dependent. All doctoral programs require the passing of comprehensive examinations. All doctoral programs require a minimum of 90 credits of study.

At the master's level, the University offers a variety of thesis and non-thesis options. All master's programs require a minimum of 45 credits. Some master's programs also have a comprehensive examination.

The academic goals of the graduate diploma programs are usually somewhat different from those of doctoral and master's programs. They are designed either to offer a further specialization in a field or discipline already studied at the undergraduate level, or to provide the introduction to a new field of study or discipline, with the express intent to develop some level of specialized knowledge. A graduate diploma will consist of a minimum of 30 credits and normally a maximum of 33 credits. Diploma programs do not require a thesis, although a graduating essay, project or report may be required. Diploma programs may require a comprehensive examination.

The University offers a number of graduate certificate programs which are designed to serve a professional clientele seeking to upgrade and advance their graduate training over a short time frame. Graduate certificate programs are normally completed in one to three years and consist of 15 credits.

All graduate programs offered by the University are listed below. Each description outlines the full-time faculty involved in the program, the

objectives of the program, and the research interests of the faculty. Admission requirements, application procedures, and degree requirements and program options are specified. In addition, all approved courses are listed. In most cases, core courses are described in detail. With the exception of the Special Individualized programs and the Ph.D. in Humanities program, all graduate programs offered by the University are attached to one of the three Faculties or The John Molson School of Business of the university and are therefore grouped accordingly.

Co-op Programs

The following graduate programs offer applicants the option of following a co-op program.

Chemistry and Biochemistry
Economics
Concordia Institute for Information Systems Engineering
Master of Business Administration

Prospective applicants should contact the department for further details.

Quick Reference to Programs and Fields

	Grad. Certificate	Diploma	Master's	Ph.D. Magisteriate
Arts and Science				
Adult Education		•		
Anglais/français en langue et techniques de localization	•			
Anthropology (see Social & Cultural Anthropology)				
Applied Linguistics			•	
Biology			•	•
Biotechnology & Genomics		•		
Chemistry			•	•
Child Study			•	
Communication				•
Communication Studies		•		
Community Economic Development		•		
Economics		•	•	•
Écriture	•			
Educational Studies			•	
Educational Technology			•	•

Programs and Fields of Advanced Study

	Grad. Certificate	Diploma	Master's Magisteriate	Ph.D.
English			•	
Environmental Impact Assessment		•		
Exercise Science *			•	
Geography , Urban & Environment Studies *			•	
Georgraphy (Option under P.P.P.A)			•	
History			•	•
History and Philosophy of Religion			•	
Human Systems Intervention			•	
Instructional Technology		•		
Journalism		•		
Judaic Studies			•	
Mathematics			•	•
Littératures francophones et résonances médiatiques			•	
Media Studies			•	
Philosophy			•	
Psychology			•	•
Political Science *				•
Public Policy and Public Administration (Political Science)			•	
Religion				•
Social & Cultural Anthropology			•	
Sociology			•	
Teaching of Mathematics			•	
TESL	•			
Theological Studies			•	
Traductologie			•	
Traduction		•		

Engineering and Computer Science

Aerospace			•	
Building Engineering	•		•	•
Civil Engineering			•	•
Computer Science		•	•	•
Electrical and Computer Engineering			•	•
Environmental Engineering	•			
Industrial Engineering *			•	
Information Systems Security *			•	

* Subject to MELS approval

Programs and Fields of Advanced Study

	Grad. Certificate	Diploma	Master's Magisteriate	Ph.D.
Mechanical Engineering	•		•	•
Service Engineering & Network Management	•			
Quality Systems Engineering *			•	
Software Systems for Mechanical and Aerospace Engineering	•			
3D Graphics & Game Development	•			
Fine Arts				
Advanced Music Performance		•		
Art Education			•	•
Art History			•	•
Creative Arts Therapies			•	
Digital Technologies in Design Art Practice	•			
Film Studies			•	
Open Media			•	
Painting and Drawing			•	
Printmaking and Photography			•	
Sculpture, Ceramics and Fibres			•	
Studio Arts			•	
The John Molson School of Business				
Administration			•	
Administration (DIA)		•		
Aviation Management	•	•		
Business Administration			•	•
Business Administration (Investment Management Option)			•	
Business Administration (Executive Option)			•	
Business Administration (International Aviation)			•	
Chartered Accountancy		•		
Community Organizational Development	•			
E-business	•			
Event Management & Fundraising	•			
Investment Management		•	•	

* Subject to MELS approval

Programs and Fields of Advanced Study

	Grad. Certificate	Diploma	Master's	Ph.D. Magisteriate
Management Accounting	•			
Management of Health Care Organizations	•			
Sport Administration (DSA)		•		
School of Graduate Studies				
Humanities				•
Special Individualized Programs			•	•
Interuniversity Programs				
Administration				•
Art History				•
Communication				•
Religion				•

Location of Graduate Programs

The following table indicates the campus location of graduate programs, with the following designations: "S" (Sir George Williams Campus) or "L" (Loyola Campus).

Program	Degree/Diploma/ Certificate	Campus
Administration	M.Sc.	S
Administration	Diploma	S
Adult Education	Diploma	S
Advanced Music Performance	Diploma	L
Aerospace	M.Eng.	S
Anglais/français en langue et techniques de localisation	Grad. Cert.	S
Applied Linguistics	M.A.	S
Art Education	Ph.D.	S
Art Education	M.A.	S
Art History	Ph.D.	S
Art History	M.A.	S
Aviation Management	Diploma	S
Aviation Management	Grad. Cert.	S

Programs and Fields of Advanced Study

Program	Degree/Diploma/ Certificate	Campus
Biology	Ph.D.	L
Biology	M.Sc.	L
Biotechnology & Geonomics	Diploma	L
Building Engineering	Ph.D.	S
Building Engineering	M.A.Sc.	S
Building Engineering	M.Eng.	S
Building Engineering	Grad. Cert.	S
Business Administration	Ph.D.	S
Business Administration	M.B.A.	S
Business Administration (EMBA)	M.B.A.	S
Business Administration (IAMBA)	M.B.A.	S
Business Administration (Investment Management)	M.B.A.	S
Chartered Accountancy	Diploma	S
Chemistry	Ph.D.	L
Chemistry	M.Sc.	L
Child Study	M.A.	S
Civil Engineering	Ph.D.	S
Civil Engineering	M.A.Sc.	S
Civil Engineering	M.Eng.	S
Communication	Ph.D.	L
Communication Studies	Diploma	L
Community Economic Development	Diploma	S
Community Organizational Develop.	Grad. Cert.	S
Computer Science	Ph.D.	S
Computer Science	M.Ap.Comp. Sc.	S
Computer Science	M.Comp.Sc.	S
Computer Science	Diploma	S
Creative Arts Therapies	M.A.	S
Digital Technologies in Design Art Practice	Grad. Cert.	S
E-Business	Grad. Cert.	S
Economics	Ph.D.	S
Economics	M.A.	S
Economics	Diploma	S
Écriture	Grad. Cert.	S
Educational Studies	M.A.	S
Educational Technology	Ph.D.	S
Educational Technology	M.A.	S
Electrical & Computer Engineering	Ph.D.	S
Electrical & Computer Engineering	M.A.Sc.	S
Electrical & Computer Engineering	M.Eng.	S

Programs and Fields of Advanced Study

Program	Degree/Diploma/ Certificate	Campus
English	M.A.	S
Environmental Engineering	Grad. Cert.	S
Environmental Impact Assessment	Diploma	S
Event Management & Fundraising	Grad. Cert.	S
Exercise Science *	M.Sc.	L
Film Studies	M.A.	S
Geography, Urban & Environment Studies *	M.Sc.	S
Geography Option (in P.P.P.A.)	M.A.	S
History	Ph.D.	S
History	M.A.	S
History and Philosophy of Religion	M.A.	S
Human Systems Intervention	M.A.	L
Humanities	Ph.D.	S
Industrial Engineering *	M.A.Sc.	S
Industrial Engineering *	M.Eng.	S
Information Systems Security *	M.A.Sc.	S
Information Systems Security *	M.Eng.	S
Investment Management	Master	S
Instructional Technology	Diploma	S
Investment Management	Diploma	S
Journalism	Diploma	L
Judaic Studies	M.A.	S
Littérature francophone	M.A.	S
Management Accounting	Grad. Cert.	S
Management of Health Care Organizations	Grad. Cert.	S
Mathematics	Ph.D.	S
Mathematics	M.A./M.Sc.	S
Mechanical Engineering	Ph.D.	S
Mechanical Engineering	M.A.Sc.	S
Mechanical Engineering	M.Eng.	S
Mechanical Engineering	Grad. Cert.	S
Media Studies	M.A.	L
Philosophy	M.A.	S
Political Science *	Ph.D.	S
Psychology	Ph.D.	L
Psychology	M.A.	L

* Subject to MELS approval

Programs and Fields of Advanced Study

Program	Degree/Diploma/ Certificate	Campus
Public Policy and Public Administration	M.A.	S
Quality Systems Engineering *	M.A.Sc.	S
Quality Systems Engineering *	M.Eng.	S
Religion	Ph.D.	S
Service Engineering & Network Management	Grad. Cert.	S
Social & Cultural Anthropology	M.A.	S
Sociology	M.A.	S
Software Systems for Mechanical & Aerospace Engineering	Grad. Cert.	S
Special Individualized (SIP)	M.A./M.Sc.	S
Special Individualized (SIP)	Ph.D.	S
Sport Administration	Diploma	S
Studio Arts	M.F.A.	S
Teaching of Mathematics	M.T.M.	L
TESL	Grad. Cert.	S
Theological Studies	M.A.	L
Traductologie	M.A.	S
Traduction	Diploma	S
3D Graphics & Game Development	Grad. Cert.	S

* Subject to MELS approval

Course Codes

ACCO	Accountancy
ADIP	Adult Education
ADMI	Administration
AHSC	Applied Human Sciences
AMBA	Business Administration (Airline & Aviation Option)
AMPS	Advanced Music Performance
ANTH	Anthropology
APLI	Applied Linguistics
ART	Art
ARTE	Art Education
ARTH	Art History
ASEM	Art Seminars (Studio Arts)
ATRP	Art Therapy
BECO	Business Economics
BIOL	Biology
BLDG	Building Engineering
BUSR	Business Research
CATS	Creative Arts Therapies
CERA	Ceramics
CHEM	Chemistry
CHST	Child Study
CIVI	Civil Engineering
COMM	MBA Modules
COMP	Computer Science
COMS	Communication Studies
DART	Digital Technologies in Design Art Practice
DESC	Decision Sciences
DIM	Diploma in Investment Management
DINE	Drama in Education
DISP	Directed Studio Practice
DTHY	Drama Therapy
ECON	Economics
EDUC	Education
ELEC	Electrical Engineering
EMBA	Business Administration (Executive Option)
ENCS	Engineering and Computer Science
ENGL	English
ENGR	Engineering
ENVS	Environmental Impact Assessment
ESTU	Educational Studies
ETEC	Educational Technology
EXCI	Exercise Science
FBRS	Fibres
FINA	Finance
FLIT	Littérature francophone
FMPR	Film Production
FMST	Film Studies
FRAA	Français
FRAN	Français
FTRA	Translation
GCEB	e-Business
GDIA	Diploma in Administration
GDSA	Diploma in Sport Administration
GEOG	Geography
GIIM	Goodman Institute of Investment Management
HENV	Human Environment
HIST	History
HUMA	Humanities
IMBA	Investment Management
INDS	Independent Study
INDU	Industrial Engineering
INSE	Information Systems Engineering
INTP	Professional Internship (Studio Arts)
JOUR	Journalism
LIBS	Library Studies
LING	Linguistics
MANA	Management
MARK	Marketing
MAST	Mathematics
MATH	Mathematics
MBA	Master of Business Administration
MECH	Mechanical Engineering
MHIS	Music History
MIM	Master in Investment Management
MINE	Music in Education
MPER	Music Performance
MSCA	Master of Science in Administration
MUSI	Music
OPME	Open Media
PHIL	Philosophy
PHOT	Photography
PHYS	Physics
POLI	Political Science
PRIN	Printmaking
PSYC	Psychology
PTNG	Painting
RELI	Religion
SCUL	Sculpture
SOCI	Sociology
SPEC	Special Individualized Programs
TESL	Teaching English as a Second Language
THEO	Theological Studies
TRAD	Traduction
TRES	Theological, Religious and Ethical Studies

FACULTY OF ARTS AND SCIENCE

Dean
DAVID GRAHAM

Vice-Dean, Curriculum and Appraisals
JOANNE LOCKE

Vice-Dean, Research and International Relations
JOHN CAPOBIANCO

Vice-Dean, Planning
ROBERT M. ROY

Mission Statement

The Faculty of Arts and Science is committed to innovative leadership in developing and disseminating knowledge. This is achieved through inclusive and accessible academic programs which stress an inter-disciplinary approach to learning. We are dedicated to excellence in teaching and research while maintaining a tradition of service to the community.

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website: http://artsandscience.concordia.ca/ahsc

Applied Human Sciences

Faculty

Professors: James Gavin *(Graduate Program Director)*, Bluma Litner, Dorothy Markiewicz *(P)*, Randy Swedburg; ***Associate Professors:*** Ghislaine Guérard, Raye Kass, Varda Mann-Feder, Lisa Ostiguy, Hilary Rose; ***Assistant Professors:*** Catherine Connolly, Don de Guerre, Fern Delamere, Gilbert Emond, Warren Linds, Peter Morden, Rosemary Reilly; ***Senior Lecturer***: Robert Hopp; ***Lecturer:*** Eva Pomeroy; ***Adjunct Professors:*** Gervase Bushe, Merrelyn Emery, Lawrence Lippitt.

(P) Cross-appointment with the Department of Psychology

Programs

The Department of Applied Human Sciences offers the degree of Master of/ Magisteriate in Arts (Human Systems Intervention).

Program Objectives

The program is intended to provide professional practitioners with theoretical understanding and practical expertise concerning collaboratively-designed interventions in social settings where adults are confronted with the need to change their perspectives, attitudes, and behaviours.

Faculty Research Interests

Research undertaken by faculty in the Department is typically oriented to understanding social change and augmenting the knowledge and efficacy of intervention in a diverse range of social systems. Current faculty research projects and publications are in the following domains: applications of group development and small group leadership; organizational development and change interventions; cross cultural perspectives of management and leadership; coaching and mentoring relationships; community intervention and interventions with community workers.

Master of/Magisteriate in Arts (Human Systems Intervention)

Admission Requirements. Candidates must have the following:

1. At least two years of full-time work experience. Preference will be shown toward applicants who have work experience that is directly related to their learning goals in the program.

2. Completion of a bachelor's degree with a minimum B average or a cumulative grade point average of at least 3.00.
3. Successful completion of a one week residential Basic Human Interaction Laboratory and have written documentation from laboratory staff that they have competency in interpersonal interaction and facilitation.
4. A clearly delineated career intention concerning the development of intervention expertise for a particular domain of professional practice.
5. Be capable of undertaking all core courses of the first year in the scheduled sequence of the program.

Application Deadlines. A detailed description of the program may be obtained from the Department. Applicants should apply online at: http://welcome.concordia.ca/. Since students must enter the program during the summer session, applications should be received by February 1. Applications for students seeking financial assistance may be required earlier. Late applications may be considered if space is available.

Fellowships and Assistantships. Qualified candidates are encouraged to apply for Concordia University graduate fellowships by December 15 and to seek further information concerning other fellowships and assistantships for which they are eligible at the Graduate Awards Office.

Requirements for the Degree

1. **Credits.** A fully-qualified candidate is required to complete a minimum of 45 credits. 39 credits will be in required coursework, including 15 credits of project work. The remaining 6 credits are to be completed in optional courses either within or outside the department. Courses that are taken to complete entrance requirements to the program may not be counted toward the program's 45 credits. In exceptional cases, students who produce evidence of successful performance (B grade or better) in compatible coursework at other institutions may be permitted transfer credit. A maximum of 9 credits in transfer courses will be permitted.

2. **Residence.** The minimum residence is one year (3 terms) of full-time study. Following the first year and with permission of the AHSC Graduate Committee, a student may extend completion of the program to more than the normal period of two years. Students will not be permitted to exceed a maximum of five years for program completion.

3. **Coursework.** The program is divided into two sections of coursework, with Year I establishing the prerequisites for Year II. In addition, students will have a minimum of six credits of Elective coursework to complete their degree requirements.

Year I provides students with fundamental understanding and frames of reference regarding change processes of persons and groups, steps in the intervention process, and ethical principles. These fundamental understandings are then deepened through application in practice-based courses of Year II. The Master's Project is intended to promote an integration of concepts and practical experience.

Year I constitutes the first phase of the program. Year II and the Elective Coursework is more individually-tailored, and constitutes the second and subsequent years, when necessary.

YEAR I: Total of Required Credits: Year I =18 credits
The following are required of all students in the first year of study; additional courses constituting up to six (6) credits of electives may be added to this set of courses:

AHSC 610 **Group Process Intervention** (3 credits)
AHSC 620 **Learning and Individual Change Processes** (3 credits)
AHSC 630 **Intervention Planning and Research Methods** (6 credits)
AHSC 660 **Philosophy and Ethics of Intervention** (3 credits)
AHSC 670 **Consultation Methods** (3 credits)

YEAR II: Total of Required Credits: Year II = 21 credits

The following will normally be required of all students:

AHSC 680 **Facilitating Individual and Group Learning Processes** (6 credits)
AHSC 698 **Master's Project** (15 credits)

Elective Coursework:

Years I and II comprise 39 of the 45 credits in this M.A. program. Students must complete an additional six credits of coursework to satisfy degree requirements.

AHSC 681 **Selected Topics** (3 credits)
AHSC 682 **Selected Topics** (3 credits)
AHSC 691 **Practicum** (6 credits)
AHSC 695 **Independent Study** I (3 credits)
AHSC 696 **Independent Study II** (3 credits)
Optional Coursework in AHSC or other departments

4. **Course substitution**. Students may be exempted from certain courses on the basis of course work completed prior to entry into the program. A maximum

of 9 credits of transfer credits will be permitted. These credits will be counted toward the required 45 credits in the program.

5. **Residential Laboratories.** Students will be required to participate in two week-long residential laboratories for which expenses for accommodation and meals will be the responsibility of the students. Students will be charged a fee for each week-long residential laboratory, in addition to regular course fees and costs for accommodations and meals.

Academic Regulations

1. **Course Load for Full-Time Students.** The normal course load for full-time students will be a minimum of 18 credits per year. A student may not register for more than 27 credits per year without permission from the AHSC Graduate Committee.

2. **Course Load for Part-Time Students.** Students will only be admitted to the program on a full-time status for the first year. With explicit permission of the AHSC Graduate Committee, a student may continue on a part-time basis following the first year of study. Part-time status is defined as enrolling in less than 8 credits per semester.

3. **Academic Standing.** The scholastic performance of all M.A. students will be reviewed at the end of each academic year for full-time students. The assessment will be based on final grades of the courses completed during the year and assessments of field supervisors when students are involved in field placements. The purpose of this review will be to monitor students' status and progress, to maintain the standards of the program, and to assist students in achieving their personal objectives for the program.

   To be considered in good standing at such a review, students must have:
   a. successfully completed the required course load specified in paragraphs 1 and 2 above;
   b. achieved a grade point average (GPA) of 3.00 or better since the previous review or since admission in the case of a first review;
   c. achieved a grade of no less than B in each academic course taken during the term of the review; and,
   d. achieved a "pass" grade from field supervisors in practicum assignments (Practicum courses will be graded "pass" or "fail").

   A student who has not fulfilled the requirements for good standing is considered either a **failed student** or a **student on conditional standing.**

4. **Conditional Standing.** Students with no failures on their record who have met the conditions for good standing will be placed on conditional standing. Conditional standing is used to monitor the progress of students

experiencing difficulty and to assist them to complete the program successfully.
Students on conditional standing will be required to achieve a grade of B or better in each course taken during this period. Students on conditional standing are not normally permitted to drop any course. Additional requirements may be imposed in individual cases. Students who do not meet the requirements for conditional standing are considered failed students and will be withdrawn from the program.

5. **Failure Regulation.** Students who fail one or more courses in the program or who do not meet the conditions of their conditional standing will be withdrawn from the program.

6. **Time Limits**. The program will normally be completed in a two year period. Some students may wish to continue on a part-time basis following the first year. Permission to do so must be obtained in advance from the AHSC Graduate Committee. All degree requirements must, however, be completed within a five year period from the initiation of the program. Students will be dropped from the program if they have not met all degree requirements at the end of five calendar years from the initiation of their programs.

7. **Graduation Requirement.** In order to graduate, students must have a cumulative GPA of at least 3.00.

Core Courses

AHSC 610 Group Process Intervention (3 credits)
This course is oriented to the theory and practice of intervention in small groups. The course involves participation in a small group laboratory through which students' experiences are integrated with conceptual frameworks, including theories of group development and leadership. Ethical issues in group processes will be considered.

AHSC 620 Learning and Individual Change Processes (3 credits)
This course will examine research and theory of individual learning and change which involves cognitive, affective and behavioural components. Intervention with an emphasis on a normative re-educative approach to facilitating learning and change will be emphasized. Illustrative intervention cases will be examined to identify essential qualities, underlying assumptions about learning and change in the context of human systems, and implications for the role of the intervener.

AHSC 630 Intervention Planning and Research Methods (6 credits)
This course will examine the design and implementation of intervention programs based on needs assessments, learning theories, and group

developmental processes. Emphasis is on participant involvement at all stages of the planning, implementation and evaluation: problem analysis and definition, generating and selecting strategies, action planning and project evaluation. The course will focus on methods of data gathering, analysis, and data presentation associated with interventions. The course will include: data collection designs, quantitative and qualitative methods of analysis, interaction with data processing systems, and techniques of data presentation and feedback.

AHSC 660 Philosophy and Ethics of Intervention (3 credits)
This course will review the philosophical underpinnings of intervention in human systems with an emphasis on a normative re-educative approach. It will address core values and ethics imbedded in change efforts, as well as examining the philosophical roots of different traditions of change methodology. It will consider the philosophical implications of change agents functioning as consultants rather than experts and as process rather than content specialists. It will consider ethical and philosophical aspects of power, strategy, and conflict, among other issues associated with intervention.

AHSC 670 Consultation Methods (3 credits)
The course will examine current models of consultation. It will enable students to establish effective client-consultant relationships based on collaborative approaches to entry, diagnosis, planning, and implementation. Ethical concerns for consultation will be integrated with discussions of methodology. Through observation and analysis of student-designed interventions, the course will provide experience-based learning and feedback. Special attention will be given to considerations of power, conflict, decision-making, negotiation, problem-solving, planning, and strategy.

AHSC 680 Facilitating Individual and Group Learning Processes (6 credits)
Prerequisite: Completion of Year I coursework (AHSC 610, 620, 630, 660, 670)
This course will focus on interventions at the individual and group levels. Client-centred models of working in groups to achieve learning and task objectives will be reviewed. Issues of design, planning, and implementation of learning programs for individuals and groups, including attention to power, problem-solving, decision-making and conflict management will be examined in a laboratory setting where students will plan and conduct a group learning program under supervision.

Elective Courses

AHSC 681 Special Topics (3 credits)
Topical seminars will be offered to provide perspectives about current intervention themes. These may complement students' programs, but will not constitute part of the required curriculum. Examples include: emerging trends in

organizational development; strategic planning models; the use of self as an instrument of change; intercultural issues in intervention; appreciative inquiry.

AHSC 682 Special Topics (6 credits)
Same as AHSC 681 when a second special topic is offered in the same term.

AHSC 691 Practicum (6 credits)
This practicum enables students to engage in intensive field-based activities toward the development of practical expertise in an area relevant to the M.A. program and the students' learning goals. The activities are carried out in association with a recognized expert practitioner.

AHSC 695 Independent Study I (3 credits)
Students may pursue studies in areas of specialized professional interest related to the graduate program or as a means of strengthening understanding of the core areas of the graduate program.

AHSC 696 Independent Study II (3 credits)
Students may pursue a second area of specialized professional interest related to the graduate program or further develop understanding in the core areas of the graduate program.

Project

AHSC 698 Master's of/Magisteriate Project (15 credits)
Prerequisite: Completion of AHSC 680
Students must demonstrate their ability to conduct a complete intervention to effect change in a human system as the principal consultant in a collaborative relationship with a client representing that system. The project includes contracting with the client, gathering and analyzing data, implementing relevant intervention activities, and evaluating the intervention as well as their role.

AHSC 699 Master's Project (9 credits)
Note: This course has been discontinued and is available only to students admitted to the program prior to Fall 1998.

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Biology

Faculty

Distinguished Professor Emeritus: Ragai Ibrahim; ***Professors:*** Paul Albert, Shimon Amir *(P)*, Ann M. English *(C)*, Muriel B. Herrington, Donal Hickey *(Canada Research Chair)*, M. Judith Kornblatt *(C)*, Edward J. Maly, Elaine B. Newman, Robert M. Roy, Sylvia Ruby, Jane Stewart *(P)*, Reginald K. Storms, Adrian Tsang, Barbara Woodside *(P)*; ***Associate Professors:*** Grant Brown, Selvadurai Dayanandan, James Grant, David Greene *(G)*, Patrick Gulick, Paul Joyce *(C)*, Bindi S. Mangat, J. Daniel McLaughlin, James Pfaus *(P)*, Vladimir Titorenko, Joanne Turnbull *(C)*, Luc Varin *(Chair)*, Paul Widden *(Graduate Program Director)*, William Zerges; ***Assistant Professors:*** Catherine Bachewich, Robert Boushel *(E)*, Emma Despland, Vincent Martin *(Junior Research Chair)*, Gerald Zavorsky *(E)*; ***Adjunct Professors:*** David Marcogliese, Geoffrey Sunahara; ***Adjunct Assistant Professor Emeritus:*** Jack Kornblatt.

(C) Faculty members from the Department of Chemistry and Biochemistry participating in the Biology Program.
(E) Faculty members from the Department of Exercise Science participating in the Biology Program.
(G) Faculty members from the Department of Geography, Planning and Environment participating in the Biology Program.
(P) Faculty members from the Department of Psychology participating in the Biology Program.

Programs

The Department of Biology offers the degrees of Ph.D., Master of/ Magisteriate in Science in Biology, and a Diploma in Biotechnology and Genomics.

Program Objectives

The Master of/Magisteriate in Science and doctoral programs in Biology are research intensive and integrate various disciplines of molecular, cellular and organismal biology. The principal fields of research include animal biology, cell biology and biochemistry, ecology and behaviour, microbiology and molecular biology, plant biochemistry and biotechnology.

Students are trained in the methodology of conducting experiments and are given the opportunity to carry out in-depth research work in any of the department's areas of specialization. In addition to advancing the frontiers of

knowledge, these research orientations give students the opportunity to prepare themselves for a wide variety of careers in the life sciences.

The Department's activities are supported by a number of specialized facilities including a greenhouse, animal holding facilities, for insects, birds, and aquatic vertebrates, darkrooms, instrument rooms with centrifuges, spectrophotometers, basic biochemical instrumentation, a sterile transfer laboratory, cold rooms, environment-controlled rooms and radioisotope laboratories. The Centre for Functional and Structural Genomics houses advanced facilities for laser-scanning confocal microscopy, sequencing, micro-arraying, proteomics, molecular biology, cell culture and bioinformatics.

The Graduate Diploma in Biotechnology and Genomics is designed to provide students with broad-based knowledge of theories, quantitative methods and applications of biotechnology and bioinformatics that are pertinent to genomic analyses. A parallel goal of the program is to provide in-depth knowledge on the following topics: functional genomics; microbial biotechnology; production of proteins of value to the pharmaceutical, agri-food and forestry industries; and the development of genomic methods for industrial and environmental applications.

Hands-on experience is a major component of the training provided by the Diploma Program. Students are trained to operate the state-of-the-art equipment and methods used in genomic and biotechnology research, and in bioinformatics analysis.

Faculty Research Interests

Basic and applied research is carried out in the department with the support of industry and of the various granting agencies of the provincial and federal governments. The Department's wide range of recent and ongoing research projects includes the following:

Animal Biology and Behaviour. Electrophysiological studies of the structure and function of insect sense organs. Evolution of chemical communication in fishes, the role of chemical alarm signals in risk assessment and mediation of predation risk, kin-selection of social behaviour; self-organizational of social behaviour, insect nutrition and feeding behaviour. Behavioural ecology of aggression, resource defence, animal contest theory and territoriality.

Cell Biology/Biochemistry. Chloroplast biogenesis, control of chloroplast-gene expression, assembly of the photosystem II complex; cell-cycle-dependent gene expression in yeast; the mechanisms responsible for accumulation of proteins within the nucleus and for rapid protein inactivation; protein secretion by yeast; biochemical and biophysical studies on the mechanism of energy production by mitochondria; the regulation of sugar metabolism and hormone

responsiveness in cultured human cells; mechanism and subunits interaction of mammalian enolases; biological electron transfer mechanisms; structure-function relationships in heme proteins and multifunctional enzymes; protein targeting mechanisms in plants; the molecular biology of development; peroxisome development, structure and function in yeast.

Ecology and Conservation. Ecology of plant-insect interactions and outbreaking insects. Behaviour, biogeography, and population dynamics of zooplankton. Early life-history, ecology and conservation of freshwater fishes. Molecular ecology, phylogeography and conservation biology of forest ecosystems. Molecular studies of community structure in saprophytic and mycorrhizal fungi and waterfowl helminthes. Pathogenesis and systematics of waterfowl helminths; host-parasite responses of larval helminths and crustaceans.

Microbiology/Molecular Biology. Genetic and molecular studies of folate metabolism in *E. coli,* protein engineering; cell cycle control in yeast; regulation of gene expression in *E. coli*; protein targeting; role of calcium-binding proteins in cell growth and development. Functional genomics: research in genomics and proteomics in the department spans fundamental investigations to industrial applications. The basic research focuses on well characterized model organisms which are amenable to genetic manipulation while the applied research primary utilizes micro-organisms with significant impact on industry, human health and the environment.

Plant Biochemistry and Biotechnology. Biochemistry and enzymology of flavonoid compounds, cDNA cloning of the genes encoding their enzymes and genetic modification of their metabolic pathways in target plants. Biosynthesis, metabolism and production of secondary metabolites in plant cell cultures, with emphasis on anthocyanin pigments, carotenes and flavour biogeneration. Molecular and biochemical studies of the function of sulfotransferases in plant growth and development. Isolation and characterization of salt stress-induced genes and, investigation of the genetic basis of salt tolerance in wild wheatgrass species. Nutritional, physiological and biochemical aspects of plant cell cultures, and *in vitro* propagation of plants.

Doctor of/Doctorate in Philosophy (Biology)

Admission Requirements. Applicants should have an M.Sc. degree in life sciences and will be assessed by the departmental Graduate Studies Committee on the basis of undergraduate and graduate grades (applicants should have at least a B average overall), letters of reference and research ability. Prior to final acceptance, the student must have a thesis supervisor, chosen by mutual agreement among the student, the Graduate Studies Committee and the potential supervisor. Students will normally be accepted only for full-time study. Students with a Master's degree from a foreign university will normally

not be directly admitted into the Ph.D. program, but will be accepted into the Master of/Magisteriate in Biology program. They will, however, on demonstration of the ability to complete a Ph.D., be eligible to transfer to a Ph.D. as described below.

Students registered in the Master of/Magisteriate in Science in Biology who demonstrate exceptional potential for independent research and have attained an A- average in graduate courses in the program may request transfer to the Ph.D. program during the first six months of the second year of enrolment. The transfer must be approved by the student's supervisory committee and the Graduate Studies Committee.

Application Procedures and Deadlines. Applications will be considered at all times. However in order to be considered for Scholarships and Teaching Assistantships, applicants to the Fall term must submit a complete application by January 15. Applicants can apply online at: http://welcome.concordia.ca/. Complete applications must be received by April 30 for September admission and by August 31 for January admission. Late applicants will be considered if space is available but financial support cannot be guaranteed. A complete application includes the application fee ($50.00), a recent transcript, a statement of purpose, and an indication of research area of interest. It is also recommended that applicants provide the names of potential supervisors. International students whose most recent degree was not obtained in an English- or French-speaking university must have recently achieved a TOEFL score of 550 or more (213 or more in the computer-based), and a recent GRE is highly recommended for all International students. Under certain conditions students may start their studies in the Summer.

Financial Support

In addition to the academic requirements, acceptance into Biology graduate programs is contingent upon a minimum financial support of $15,000 per annum. Full-time masters and doctoral students without scholarship support will receive a minimum of $15,000 annually in return for work as teaching and laboratory research assistants. This funding will be renewable for one year at the M.Sc. and for two years at the Ph.D. levels, contingent upon satisfactory performance. Students admitted to the graduate programs are not ordinarily permitted to work outside the University.

Requirements for the Degree

1. **Credits**. A fully-qualified candidate entering the program with a master's degree is required to complete a minimum of 90 credits. Students transferring from the M.Sc. program will be required to complete 90 credits in addition to the course requirements for the Master's program (9 credits). Students may be required to take up to 12 credits, at the graduate or advanced undergraduate

level, in addition to the above. These courses may be required to strengthen understanding of peripheral areas or of the student's area of specialization. The additional course work may be assigned as an admission requirement or following the Research Proposal and Qualifying Exam (BIOL 850).

2. **Residence.** The minimum residence requirement is two years (6 terms) of full-time study beyond the master's degree, or three years (9 terms) of full-time study beyond the bachelor's degree.

3. **Courses.** To graduate, students must meet the following requirements:
   a. 3 credits from BIOL 616, BIOL 670, BIOL 671 or any of the Advanced Topics or Reading Courses listed at the end of the Biology calendar entry. Other courses in the list may be chosen upon recommendation of the supervisory committee and the Graduate Program Director.
   b. BIOL 801: Pedagogical training (3 credits). Candidates are required to give four lectures (normally 75 minutes each) to undergraduate classes. Two lectures are in introductory level courses and two in advanced undergraduate courses. Tutorials are provided to introduce students to teaching methods. The course is marked on a pass/fail basis.
   c. BIOL 802: Research seminar (3 credits). Students are required to give one seminar to the Department based upon their research project. Normally the seminar is given in the second or third years of residency. Seminars are graded on a standard scale (A+ to F). The grade is based upon the presentation, content, and the student's ability to answer questions. The grade is assigned by the Graduate Program Director in consultation with the candidate's supervisory committee and other faculty present at the seminar.
   d. BIOL 850: Research proposal and qualifying exam (6 credits). The student prepares a written research proposal based upon the research topic chosen for thesis research. The proposal is prepared in consultation with the supervisory committee and contains a literature review, a progress report and a detailed description of future experiments. The proposal should demonstrate a good understanding of the background of the project, the questions to be answered, and the experimental approaches needed to answer these questions. Both the written proposal and an oral summary of the proposal are presented to the examining committee within one year of entry into the Ph.D. program.
   e. BIOL 890: Research and thesis (75 credits).

4. **Research Proposal and Qualifying Exam.** The examining committee consists of the student's supervisory committee plus two additional members of the Department of Biology and is chaired by the Graduate Program Director. The student is evaluated on the basis of the quality of the oral and written presentations of the proposal and on responses to questions from the examining committee. These questions extend into general areas as well as

focusing directly on the thesis topic. The examining committee assigns one of the following three grades:

a. PASS: The student is admitted to candidacy for a Ph.D. in Biology.
b. CONDITIONAL PASS: The student is admitted to candidacy but is required to complete at least one additional course. This grade is assigned only if the background preparation of the student is judged to be insufficient.
c. FAIL: The student must withdraw from the program.

If the examining committee judges that the proposal has weaknesses that can be corrected with minor revisions, it may suspend assigning a mark for a period not exceeding three months. The revised proposal then is assigned one of the three above grades.

5. **Thesis.** A major portion of the Ph.D. program involves the planning and execution of innovative and original research under the direction of a supervisor. It is normally expected that this research should result in publication in reputable journals, on which the candidate is the first author and the major contributor of ideas and experimental data. The thesis will be examined by a Thesis Examining Committee and will be defended orally.

Academic Regulations

1. **GPA Requirement.** The academic progress of students is monitored on a periodic basis. To be permitted to continue in the program, students must obtain a cumulative grade point average (GPA) of 3.00 based on a minimum of 6 credits. Students whose GPA falls below 3.00 are considered to be on academic probation during the following review period. Students whose GPA falls below 3.00 for two consecutive review periods are withdrawn from the program.

2. **C Rule.** Students who receive more than one C grade during the course of their Ph.D. studies will be required to withdraw from the program. Students may appeal for re-admission. Students who receive another C after re-admission will be required to withdraw from the program and will not be considered for re-admission.

3. **F Rule.** Students who receive a failing grade in the course of their Ph.D. studies will be withdrawn from the program. Students may apply for re-admission. Students who receive another failing grade after re-admission will be withdrawn from the program.

4. **Time Limits.** All work for the doctoral degree must be completed by the end of the fourth calendar year following the year of admission to candidacy, defined as successful completion of the Research Proposal and Qualifying Exam (BIOL 850).

5. **Graduation Requirement.** In order to graduate, students must have a cumulative GPA of 3.00.

Master of/Magisteriate in Science (Biology)

Admission Requirements. The admission requirement is a B.Sc. degree or equivalent with specialization in biology with good standing (*B* average) from a recognized university. Exceptionally, applicants not meeting the GPA requirement may be admitted on the basis of outstanding academic letters of reference, good performance and high standing in advanced courses or exceptional research experience.

Application Deadlines. Applications will be considered at all times, however in order to be considered for Scholarships and Teaching Assistantships applicants to the Fall term must submit a complete application by January 15. Applicants can apply online at http://welcome.concordia.ca/. Complete applications to the Winter term must be received by August 31. Late applicants will be considered if space is available but financial support cannot be guaranteed. A complete application includes the application fee ($50.00), a recent transcript, a statement of purpose, an indication of research area of interest, and providing the names of potential supervisors is recommended. International students whose most recent degree was not obtained in an English- or French-speaking university must have recently achieved a TOEFL score of 550 or more, and a recent GRE is highly recommended for all International students. Under certain conditions students may start their studies in the Summer.

Financial Support

In addition to the academic requirements, acceptance into Biology graduate programs is contingent upon a minimum financial support of $15,000 per annum. Full-time masters and doctoral students without scholarship support will receive a minimum of $15,000 annually in return for work as teaching and laboratory research assistants. This funding will be renewable for one year at the M.Sc. and for two years at the Ph.D. levels, contingent upon satisfactory performance. Students will normally be accepted only for full-time study. Students admitted to the graduate programs are not ordinarily permitted to work outside the University.

Requirements for the Degree

1. **Credits.** A fully-qualified candidate is required to complete a minimum of 45 credits.

2. **Residence.** The minimum residence requirement is one year (3 terms) of full-time study.

3. **Courses.** Three 3-credit courses (9 credits), to be chosen in consultation with the candidate's advisory committee.

4. **Thesis** (**BIOL 696**, 36 credits). The thesis will be examined by a committee composed of the student's supervisory committee plus a third examiner chosen at the discretion of the Graduate Program Director. An oral examination chaired by the Graduate Program Director or his/her designate will be conducted before the examining committee to test the student's ability to defend the thesis.

5. **Seminars.** Each student is expected to attend and participate in departmental seminars. In addition, students will be required to present a short (20-30 minutes) seminar to the department on their research once during their residency, normally on completion of their first year.

Academic Regulations

1. **GPA Requirement.** The academic progress of students is monitored on a periodic basis. To be permitted to continue in the program, students must obtain a cumulative grade point average (GPA) of 3.00 based on a minimum of 6 credits. Students whose GPA falls below 3.00 are considered to be on academic probation during the following review period. Students whose GPA falls below 3.00 for two consecutive review periods are withdrawn from the program.

2. **Progress Report.** Each student's progress is formally evaluated by the student's advisory committee every six months and a report is submitted to the Graduate Program Director.

3. **C Rule.** Students who obtain less than a grade of B- in a course are required to repeat the course or take another course. Students receiving more than one C grade will be withdrawn from the program.

4. **F Rule.** Students who receive a failing grade in the course of their M.Sc. studies will be withdrawn from the program. Students who receive a grade of less than B- after re-admission will be withdrawn from the program.

5. **Time Limit.** When students do not complete their master's program within two years, a reasoned request for an extension must be submitted to the thesis committee before they can maintain their registration in the program.

6. **Graduation Requirement.** In order to graduate, students must have a cumulative GPA of at least 3.00.

Courses

The content of the following courses will vary from year to year and will reflect the interests of the department and the instructor in the course. Not all courses will be offered in any given academic year. Details of the courses to be given together with their respective course contents will be available at the beginning of the academic year. All are one-term 3-credit courses.

The following reading courses are designed to meet special needs of students in their areas of research, and involve the presentation, discussion and critical analysis of information from current journal articles.

BIOL 601 Readings in Ecology and Behaviour I
BIOL 602 Readings in Cell and Molecular Biology I
BIOL 606 Readings in Organismal Biology I
BIOL 607 Readings in Ecology and Behaviour II
BIOL 608 Readings in Cell and Molecular Biology II
BIOL 609 Readings in Organismal Biology II
BIOL 612 Advanced Topics in Evolution
BIOL 613 Advanced Topics in Behavioural Ecology
BIOL 614 Advanced Topics in Ecology
BIOL 615 Advanced Topics in Animal Biology
BIOL 630 Advanced Topics in Bioinformatics
BIOL 631 Advanced Topics in Biotechnology
BIOL 632 Advanced Topics in Cell Biology
BIOL 635 Advanced Topics in Molecular Genetics
BIOL 640 Advanced Topics in Plant Biology
BIOL 680 Advanced Topics in Biology
BIOL 685 Advanced Topics in Microbiology
BIOL 696 Master's Research and Thesis (36 credits)

The following courses in Biochemistry may be taken for credit in the program.

CHEM 670 Selected Topics in Biochemistry and Biophysics
CHEM 671 Structure and Function of Biomembranes
CHEM 674 Protein Targeting
CHEM 677 Enzyme Kinetics and Mechanism
CHEM 678 Protein Engineering and Design

BIOL 616 Current Advances in Ecological Research
This course is given in alternate years and reviews selected areas of current research in ecology, evolution and behaviour through critical analysis of recent publications. Topics vary from year to year, and are determined in part by the interests of the students. Material covered may include papers published in refereed journals, monographs or books on specialized topics, or new textbooks covering advanced topics in a relevant area. Students are responsible for giving

class presentations of selected material, leading class discussions, and submitting critiques and answers to assigned essay questions. Grading is based upon class participation, oral presentations and written work. Lectures only. (No laboratory component).

BIOL 622 Advanced Techniques in Ecology *
This course introduces students to a variety of techniques of experimental design, data collection, and quantitative analysis. Students participate in a series of modules, each of which presents experimental and analytical techniques appropriate for one area of modern research in ecology, behaviour, or evolution. Some modules require students to collect and subsequently analyze original data from field or laboratory settings. Modules and their contents may vary from year to year. Tutorials and laboratory.

BIOL 623 Advanced Applied Ecology and Conservation *
This course applies principles of ecology at the individual, population, community and ecosystem level to identify and solve practical environmental problems. Topics include pollution, climate change, and farming, harvesting renewable resources, designing nature reserves and conserving bio-diversity. Lectures and tutorials.

BIOL 624 Advances in Decomposer Communities and Nutrient Cycling *
This course examines the role of the microbial community in the fundamental processes of decomposition and nutrient cycling. We discuss the role of microbes in the breakdown of organic molecules and the release and transformation of mineral elements. Emphasis is placed on the interactions between decomposition and on the interactions between bacteria, fungi, and the microbes in the maintenance of nutrient cycles. Lectures and laboratory.

BIOL 633 Advanced Immunology *
The role of the immune system in maintenance of body homeostasis will be presented with particular reference to cells and tissues of the immune system, their organization as well as their structural and functional relationships. Topics include: maturation and differentiation of B and T lymphocytes; structure and properties of antibodies; immune responses to antigens; genetic aspects of antibody synthesis; immunological considerations in AIDS, cancer, and autoimmune diseases. Lectures and seminars.

BIOL 634 Advanced Cell Biology *
Lectures dealing with selected topics in mammalian cell biology. These include introduction to the elements of cell biology. Introduction to the elements of cell culture with reference to the growth and function of non-differentiated and differentiated cells. Control of cell cycling under normal and abnormal states, mechanisms of peptide and steroid hormone action with emphasis on intracellular signaling pathways. The control of gene transcription and

detailed analysis of the effect of host cell factors on virus replication. Lectures only.

BIOL 660 Advanced Plant Biochemistry *
Biochemical study of the natural constituents and secondary metabolites unique to plants. Their biosynthesis, biotransformations, and functions in plants, as well as their economic and pharmacologic importance are stressed. Lectures only.

BIOL 661 Advanced Tissue Culture *
This course looks at plant-growth regulators, nutritional requirements, and other factors necessary for in-vitro culturing of plant cells and tissues. The course also discusses methods available for nuclear transfers and the propagation of transformed plants. Lectures only.

BIOL 670 Scientific Communication
This course is offered every other year and is open to all graduate students in Biology or by special permission from the instructor. It is designed to present the requirements for publishable scientific writing, successful research proposals and the presentation of oral papers at scientific meetings. The course emphasizes good writing habits, focuses on the importance of thought, the conciseness of statements and clarity of exposition. The course combines lectures, group discussions, workshops and oral presentations. Marks are based on a number of written assignments, oral presentations as well as participation in class.

BIOL 671 Scanning Electron Microscopy *
This course is given alternate years in the Summer session and explains both the theory and practice of instrumentation and methodology. Students learn to operate the Scanning Electron Microscope (SEM) and ancillary equipment such as sputter-coater and the critical point drier. Hands-on learning experience is stressed to acquire familiarity with special techniques. Instructions cover three aspects: instrumentation, specimen preparation (fixation and drying), and specimen mounting and coating. Tutorials and laboratory.

BIOL 687 Advanced Molecular Genetics *
This course concentrates on basic microbial and molecular genetics, introducing isolation and characterization of mutants, methods of mapping mutants, transposons, episomes, and recombinant DNA techniques. Lectures and conferences.

BIOL 688 Advances in Biological Regulatory Mechanisms *
This course examines the molecular basis of the control of metabolic pathways with an emphasis on procaryote systems. The course concentrates on the analysis of the rationale of experimentation used to elucidate these regulatory mechanisms. Lectures and conferences.

BIOL 689 Advanced Techniques in Molecular Biology *
Theory and practice of modern experimental procedures of molecular biology, including use of restriction enzymes, gene cloning, and hybridizations, DNA sequencing, site-directed mutagenesis, and the use of bacteria and phage in biotechnology. Laboratory and tutorials.

BIO 690 Advanced Gene Structure *
This course deals with gene regulation in eukaryotes. Topics covered include transcription, transcript processing, translation, and post-translational processes. Lectures only.

* Course descriptions listed here correspond to undergraduate course descriptions except for BIOL 616 and 670 which are not available to undergraduate students. It is understood that an instructor who grants written permission to register in the course as a graduate student will require extra work from the students for graduate credit. These courses are open to doctoral students only under exceptional circumstances.

Diploma in Biotechnology and Genomics

***Graduate Program Director*:** Dr. J. Powlowski

Admission Requirements. To be considered for admission, students must hold a B.Sc. degree from an accredited university with at least fifteen credits in courses at the 200 or 300 level in the following subjects: genetics, cell biology, molecular biology, biochemistry, and 3 credits of laboratory in one or more of the previous subjects. In addition, applicants should have obtained an undergraduate grade point average (GPA) of 3.00 (on a scale with a maximum of 4.30).

International students whose undergraduate degree was not obtained in an English-speaking university must have recently achieved a TOEFL score higher than 600. A recent advanced GRE is required for international students.

Application Deadlines. Applications must be received by March 1. Applicants should apply online at: http://welcome.concordia.ca/. Depending on the profile of the applicant, the program can be completed in one year.

Requirements for the Diploma

1. **Credits.** Students are required to complete a minimum of 30 credits, comprised of 24 credits of course work and a 6-credit research project. Of the 30 credits required, 21 are designated as core.

2. **Courses.** Credit courses for the diploma program are listed below. All courses are 3 credits unless otherwise indicated.

Core Courses (21 credits)

BIOL 510	**Bioinformatics**
BIOL 511	**Structural Genomics**
BIOL 512	**Functional Genomics**
BIOL 515	**Biotechnology and Genomics Laboratory**
BIOL 516	**Project in Biotechnology and Genomics (6 credits)**
PHIL 530	**Ethical, Legal and Social Implications of Biotechnology**

Elective Courses (9 credits)

BIOL 520	**Bioinformatics Programming**
BIOL 521	**Industrial and Environmental Biotechnology**
BIOL 523	**Agriculture and Agri-Food Biotechnology**
BIOL 524	**High-throughput Instrumentation**
CHEM 678	**Protein Engineering and Design**
CHEM 690A	**Experimental Protein Chemistry**

Academic Regulations

1. **GPA Requirements.** Students having completed at least four courses are assessed at the end of each academic year based on creditable courses completed after their first registration in the program. To be permitted to continue, students must have obtained a cumulative grade point average of at least 3.00.

2. **C Rule.** Normally a student receiving a grade of *C* in two courses will be withdrawn from the program. Students withdrawn for this reason may petition the Diploma Committee for special consideration. In cases of extenuating circumstances probationary continuation in the program will be considered.

3. **F Rule.** Students who receive a failing grade in the course of their studies will be withdrawn from the program. Students may apply for re-admission. Students who receive another failing grade after re-admission will be withdrawn from the program.

4. **Time Limit.** All work for a diploma program for full-time students must be completed within 6 terms (2 years) from the time of initial registration in the program; for part-time students the time limit is 12 terms (4 years).

5. **Graduation Requirement.** To graduate, students must have completed a11 course requirements with a cumulative grade point average of at least 3.00.

Courses

BIOL 510 Bioinformatics
This course provides the tools for life scientists to interpret and analyze biological sequence data. It provides a general overview of the growth in availability of genetic information. The course covers the genetic databases; the rapidly-increasing number of genome databases, including the human genome database; the sequence homology search engines and search algorithms; software for the identification of structural sequence components; and the determination of evolutionary relationships between sequences. *Prerequisites*: BIOL 367 or equivalent; COMP 228 (System Hardware) or permission of the Diploma Program Director.

BIOL 511 Structural Genomics
This course provides an overview of genome analysis including: cloning systems; sequencing strategies; methods of detecting genes and approaches to mapping genomes. It covers the theory and design of the different approaches, and the analysis of genomic data generated from them. *Prerequisite*: BIOL 367 or permission of the Diploma Program Director.

BIOL 512 Functional Genomics
This course focuses on the functional analysis of expressed genes and their products. Course content includes the construction and screening of normalized cDNA libraries, analysis of expressed sequence tags (ESTs), functional analysis by gene knock-outs, localization of gene products by gene knowk-ins, transcription profiling, systematic identification of proteins, and functional analysis of proteins by detection of protein-protein interactions. *Prerequisite*: BIOL 367 or permission of the Diploma Program Director.

BIOL 515 Biotechnology and Genomics Laboratory
This is a hands-on course on techniques used in biotechnology and genomics. Experiments conducted in this course include separation and mapping of high molecular weight DNA fragments, shotgun sequencing, ESTs sequencing, protein production in bacteria and fungi, functional analysis of protein products, protein arrays, and *in vivo* detection of protein interactions. *Prerequisite*: BIOL 368 or permission of the Diploma Program Director.

BIOL 516 Project in Biotechnology and Genomics (6 credits)
Each student conducts a project under the supervision of a faculty member at Concordia or other research institutions affiliated with the program. The project topic requires approval by the course coordinator. The project can be taken over an 8-month (10 hours per week) of a 4-month period (20 hours per week) at Concordia or other approved institutions or companies. The project will be chosen from one or more of the following fields: biotechnology, genomics, bioinformatics, and high-throughput experimentation. The nature of the project can be research, development, or application. A student who is working full-time or part-time can pursue the project in his/her place of employment

subject to approval. (Approval will only be given to projects which are clearly demonstrated to be independent of the regular work requirement). At the end of the project, the student is required to submit a report on the results of the project and present the results publicly in the form of a scientific poster or a short talk at a scheduled Genomics/Biotechnology Research Day. *Prerequisites*: BIOL 468; BIOL 368; or permission of the Diploma Program Director.

BIOL 520 Bioinformatics Programming
This course is an introduction to working with public domain tools for bioinformatics, and the management of computers, software, and databases for bioinformatics. It covers setting up and use of a workstation running Linux, basic Unix commands, and scripting the Unix shell. It also provides an introduction to Perl, python, Java, and C++ programming languages, the Apache web server, and the mySQL database. *Prerequisites*: BIOL 510; COMP 248 or equivalent.

BIOL 521 Industrial and Environmental Biotechnology
This course provides an in-depth evaluation of current biotechnology tools used in pharmaceutical and forestry industries, and in environmental remediation. New technologies and genomic approaches that can be applied to these processes are also discussed. *Prerequisites*: BIOL 511; BIOL 512.

BIOL 523 Agriculture and Agri-Food Biotechnology
This course provides an overview on the use of biotechnology in agriculture and in the agri-food industry. Plant genomics and genetic manipulation of plants are emphasized. Also discussed are biotechnology methods used in reducing agricultural pollutants and converting agricultural surplus to energy. *Prerequisites*: BIOL 511; BIOL 512.

BIOL 524 High-throughput Instrumentation
This is a hands-on introduction to high-throughput instruments used in biotechnology and genomics. Students are exposed to capillary electrophoresis-based DNA sequencing, microplate-based PCR reactions and purification of PCR products, construction of DNA chips, microarray scanning, and liquid handling robotics. Enrolment in this course is restricted to ten students. Only students with at least an A- in BIOL 515 are considered for acceptance into this course. *Prerequisite*: BIOL 515.

PHIL 530 Ethical, Legal, and Social Implications of Biotechnology
This interdisciplinary course examines some of the ethical, legal, and social implications of recent developments in biotechnology, genomics, and bioinformatics. Students explore current debates about biotechnologies in the fields of agricultural biotechnology, global development, and environmental risk. Issues such as commercialization and intellectual property, the role of media and public perceptions of biotechnologies, and social responsibility and policy formation are also addressed. *Prerequisite*: BIOL 367 or permission of the Diploma Program Director.

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Chemistry and Biochemistry

Canada Research Chair: Chris Wilds; ***Distinguished Professor Emeritus:*** Oswald S. Tee; ***Professors Emeriti:*** Mary Baldwin, Lawrence D. Colebrook, M. Judith Kornblatt, Nick Serpone; ***Professors*****:** Peter H. Bird, John A. Capobianco, Ann M. English, Muriel B. Herrington *(B)*, Donal Hickey *(B)*, Marcus F. Lawrence *(Chair)*, Raymond Le Van Mao, Reginald Storms *(B)* Adrian Tsang (*B*); ***Associate Professors:*** Georges Y.M. Dénès, Patrick Gulick *(B),* Paul B.M. Joyce, Gilles Peslherbe, Jim Pfaus *(P)*, Justin B. Powlowski, Cameron Skinner *(Graduate Program Director)*, Joanne Turnbull, Luc Varin *(B),* William Zerges *(B)*; ***Assistant Professors****:* Catherine Bachweich *(B)*, Louis Cuccia, Christine DeWolf, Yves Gelinas, Christopher C.M. Kozak, Vincent Martin *(B)*, Philippe Merle, Heidi M. Muchall, Sebastien Robidoux, Cerrie Rogers; ***Adjunct Professors****:* Livain Breau *(UQAM)*, Irena Ekiel *(NRC/BRI)*, Brian Kennedy *(Merck Frosst)*, Benoit Marsan *(UQAM)*, Steven A. Mitchell *(NRC/SIMS)*, Dorothy Pocock, René Roi *(UQAM)*, Karen St. Seymour *(U. of Patras, Greece)*, Geoffrey I. Sunahara *(NRC/BRI)*.

(B) Faculty members from the Department of Biology participating in the Graduate Program.
(P) Faculty members from the Department of Psychology participating in the Graduate Program.

Programs

The Department of Chemistry and Biochemistry offers graduate programs leading to a Ph.D. degree in Chemistry and a Master of/Magisteriate in Science in Chemistry.

Program Objectives

Students enrolling in either the master's or doctoral programs will find a research-oriented program, faculty members with international reputations in their fields, and laboratory facilities that are in some cases unique in Canada. Areas of strength include computational chemistry, physical inorganic chemistry, new inorganic materials, and research topics at the interface between chemistry and biology. This latter area exists as a collaborative effort between the Department of Biology and the Department of Chemistry and Biochemistry, with crossover teaching and shared research projects. Students may apply to either department for studies in biochemistry.

Full-time master's and doctoral candidates receive approximately $15,500 annually from the department in return for work as teaching or laboratory

research assistants. Among the major facilities accessible to faculty and students are the Centre for Research in Molecular Modeling, the Biological Mass Spectrometry Facility with special expertise in biomolecule analysis by LC-MS, an NMR laboratory, and the Centre for Structural and Functional Genomics.

Faculty Research Interests

The Department offers research projects in certain fields of concentration. Current research areas include:

Analytical and Bioanalytical Chemistry. Biosensors; electrochemistry; chemical recognition; silicon-based DNA sensors; capillary electrophoresis; laser-induced fluorescence detection; capillary electrochromatography; microfluidic devices; analytical organic geochemistry and chemical oceanography; global carbon cycle; sediment diagenesis.

Biochemistry and Biophysical Chemistry. Mechanism and subunit interactions in mammalian enolases; enzymes involved in aromatic degradation by bacteria and fungi; mechanisms of oxygenases; mitochondrial transfer RNAs and protein import; mechanistic enzymology of oligomeric proteins such as aspartate transcarbamylase; fungal proteomics and functional genomics; folate biosynthesis and translational misreading in *E. coli;* bioenergetics; form and function of cytochrome *c* oxidase; microbial metabolism; regulation of thymidylate synthetase during the cell cycle; molecular biology of development and signal transduction; neurochemistry in the brains of rats; DNA repair and mutagenesis; plant stress responses; plant sulfotransferases; thylakoid biogenesis, lipid-enzyme interactions; cell membrane structure.

Bioinorganic and Physical Inorganic Chemistry. Structure-function relationships in heme proteins; biological chemistry of nitric oxide and peroxide, peroxidase and redox signalling; calcium sites in proteins; photochemistry and photophysics of inorganic systems; heterogeneous photocatalysis and photon-assisted phenomena with semi-conductor catalysts; environmental photochemistry, and photodegradation of pollutants; optical spectroscopy of defects and/or impurity centers in inorganic solids (non-crystalline, single crystals); vibronic solid state lasers; spectroscopic studies of rare earths; molecular dynamic calculations; dilution narrowed spectroscopy; low frequency Raman; homogenesis catalysis; green chemistry and sustainable processes.

Organic Chemistry. Organic reaction mechanisms; kinetic and spectroscopic detection of transient intermediates; supramolecular chemistry; effects of complexation on reactivity; cyclodextrin catalysis; transition state stabilization; nuclear magnetic resonance; molecular modeling; mass spectrometry; electronic and molecular structure studies; ozone reaction at

interfaces; interfacial phenomena; folding and self-organization in bio-inspired materials; organometallic synthesis and characterization; transition metals and main group complexes; polymer chemistry.

Computational Chemistry. Free energy calculations and simulations of enzyme-ligand complexes and biosensors; proton and electron transfer in biological systems; chemical physics at surfaces; reaction dynamics; quantum chemistry; photochemistry and photophysics; structure and properties of molecules; phase transitions at surfaces; biosensor surfaces; solvation, catalysis and reactions in clusters; applications of density functional theory.

Materials and Solid State Chemistry. Solid state materials; divalent tin compounds; ionic conductivity; phase transitions; Mössbauer spectroscopy; iron-containing materials; minerals; ceramics; heterogenous catalysis; zeolite and metal-supported catalysts; adsorption/diffusion in molecular sieves; synthesis of zeolites and crystalline silicates; synfuels from coal and natural gas; microporous and mesoporous metallosilicates (inorganic microporous membranes); two-dimensional fluorides and chloride fluorides; order-disorder phenomena.

Synthetic Inorganic Chemistry. Coordination and organometallic chemistry (metal-ligand design); small molecule activation; catalysis; paramagnetic metal complexes, organometallic materials; bioorganometallic models; magnetic materials. Research in the group focuses on the synthesis of paramagnetic organometallic complexes. These species are studies for small molecule activation (such as dinitrogen activation, hydrogenation, oxidation, and C-X bond metathesis with small organic molecules). Further work entails the synthesis of paramagnetic metal-containing polymers or multimetallic assemblies. These systems possess unique magnetic properties that have applications in materials chemistry.

Current details on the above research programs are available from the Department, and on the World Wide Web at:
http://artsandscience.concordia.ca/chem/chem.html

Doctor of/Doctorate in Philosophy (Chemistry)

Admission Requirements. The normal requirement for admission is a Master of Science degree in Chemistry with high standing from a recognized university. Comparable qualifications in biology or biochemistry are also acceptable for applicants wishing to do graduate studies in biochemistry. Upon recommendation by full-time members of the faculty of the department of chemistry and biochemistry, students enrolled in the Master of Science (Chemistry) program at Concordia University who have completed a minimum of 6 credits of graduate level course work and who have shown themselves to be outstanding through performance in research may apply for permission to

proceed directly to doctoral studies without submitting a master's thesis (fast-tracking). Outstanding students who have maintained a grade point average of greater than 3.5 in their last two years of study and those with external scholarships (NSERC, CIHR, FQRNT, FCAR) may also apply to the Ph.D. program directly (fast-tracking) from their B.Sc. program.

It is also possible to carry out Ph.D. studies on a CO-OP basis with the collaboration of an employer. A CO-OP graduate student conducts research of interest to the employer, normally in the employer's laboratory, but directs the project toward a thesis topic acceptable to the department at Concordia and under the guidance of an academic supervisor in the department. The student will spend one term, normally with the support of an employer, gaining experience teaching in undergraduate laboratories and participating actively in the departmental seminars. This program will be available in areas of chemistry and biochemistry where the department has the resources to provide a suitable academic co-supervisor. It is a condition of the program that the employers agree to the publication of thesis results. Prospective applicants should contact the department for further details.

Application Deadlines. The normal deadline for completed applications is June 1 for Fall term, October 1 for Winter term and April 1 for Summer term.

Requirements for the Degree

1. **Credits.** A candidate entering the doctoral program with a master's degree is required to complete a minimum of 90 credits. A candidate entering the doctoral program under accelerated admission (fast-tracking) from the B.Sc. program is required to complete a minimum of 9 credits from graduate courses listed under *Topics* in addition to the regular 90 credits; a candidate entering the doctoral program under accelerated admission (fast-tracking) from the M.Sc. program is required to complete a minimum of 3 credits listed under *Topics* in addition to the regular 90 credits.

2. **Residence.** The minimum period of residence is two years (6 terms) of full-time graduate study beyond the master's degree or three years (9 terms) of full-time graduate study (or the equivalent in part-time study) beyond the bachelor's degree for those students who are permitted to enroll for doctoral studies without completing a master's degree. It should be understood that this is a minimum requirement, and that a longer period may be necessary in order to complete all of the work that is required for the degree.

3. **Courses.** The following are required of fully-qualified students:
   a. 6 credits from courses listed under *Topics*, in the general field of the student's research problem.
   b. CHEM 896: Research Proposal and Comprehensive Examination (9 credits).

A student in the doctoral program is required to present a progress report on his/her research and on future research plans. The presentation should reflect the student's awareness of current research in his/her field and demonstrate an ability to carry out a significant research problem and provide a rational approach to its solution. The student's knowledge and understanding of fundamental chemical and biochemical principles will also be examined.

The student is expected to complete CHEM 896 within 18 months of admission directly into the Ph.D. program, or within 28 months of admission via the M.Sc. stream. In exceptional circumstances the department may permit an extension of time for completion of this course. The CHEM 896 Examining Committee assigns one of the following two grades: (a) PASS - the student is admitted to candidacy for a Ph.D. degree in Chemistry; (b) FAIL - the student must withdraw from the program.

c. CHEM 855: Doctoral Research and Thesis (69 credits).
d. CHEM 667 and 668: Seminars (3 credits each).
   Students who have completed CHEM 666: Seminar or its equivalent as part of a master's program may, if they wish, and with the permission of the department, substitute an additional course listed under *Topics* for CHEM 668: Seminar.
   These seminar courses provide opportunities for the student to prepare and present material concerning a current research problem in an area of chemistry or biochemistry to a critical audience. One seminar may be on the student's own research but the other must be on a different topic. The courses are designed to give students practice at communicating and defending their ideas on a research topic in a professional forum, and should successfully inform an audience of chemists and biochemists.
e. With permission from their Advisory Committee students are allowed to substitute graduate level courses from other departments relevant to their research problems, or professional development (e.g., selected MBA courses) as partial fulfillment towards their degree requirements.

4. **Thesis.** Students will work on a research topic under the direction of a faculty member and present an acceptable thesis at the conclusion (CHEM 855: Doctoral Research and Thesis). Students may submit a manuscript-based thesis following the guidelines outlined in the section on *Thesis Regulations* in this calendar. In addition, a public oral examination will be conducted to test the student's ability to defend the thesis.

5. **Seminars.** Each student is **required** to attend and participate in departmental seminars.

6. **Cross-registration.** Students may, with the permission of their advisory committee, cross-register for courses falling in the *Topics* categories in other Québec institutions.

Academic Regulations

1. **GPA Requirement.** The academic progress of students is monitored annually. To be permitted to continue in the program, students must obtain a cumulative grade point average (GPA) of 3.00 based on a minimum of 6 credits. Students whose GPA falls below 3.00 are considered to be on academic probation during the following review period. Students whose GPA falls below 3.00 for two consecutive review periods are withdrawn from the program.

2. **C Rule.** Students who receive more than one C grade during the course of their Ph.D. studies will be required to withdraw from the program. Students may appeal for readmission. Students who receive another C after readmission will be required to withdraw from the program and will not be considered for readmission.

3. **F Rule.** Students who receive a failing grade in the course of their Ph.D. studies will be withdrawn from the program. Students may apply for readmission. Students who receive another failing grade after re-admission will be withdrawn from the program.

4. **Time Limit.** All work for a doctoral degree must be completed before or during the calendar year, 18 terms (six years) of full-time study from the time of original registration in the program.

5. **Graduation Requirement.** In order to graduate, students must have a cumulative GPA of at least 3.00.

Master of/Magisteriate in Science (Chemistry)

Admission Requirements. The admission requirement is an honours or specialization degree in chemistry or biochemistry or its equivalent. Comparable qualifications in related areas such as biology or physics may also be acceptable. Qualified applicants requiring prerequisite courses may be required to take up to two such courses in addition to their regular graduate program. Applicants with deficiencies in their undergraduate preparation may be required to take a qualifying program.

Candidates for the master's degree may register on either a full-time or a part-time basis. It is also possible to carry out M.Sc. studies on a CO-OP basis with the collaboration of an employer. CO-OP M.Sc. graduate studies are arranged as a form of a full-time or part-time program where the student conducts research of interest to the employer, normally in the employer's laboratory, but directs the project toward a thesis topic acceptable to the department at Concordia and under the guidance of an academic supervisor in the department. The student will spend one term, normally with the support of an employer,

gaining experience teaching in undergraduate laboratories and participating actively in the departmental seminars. This program will be available in areas of chemistry and biochemistry where the department has the resources to provide a suitable academic co-supervisor. It is a condition of the program that the employers agree to the publication of thesis results. Prospective applicants should contact the department for further details.

Application Deadlines. The normal deadline for completed applications is February 1 for Fall term, October 1 for Winter term and April 1 for Summer term.

Requirements for the Degree

1. **Credits.** A fully-qualified candidate is required to complete a minimum of 45 credits.

2. **Residence.** The minimum residence requirement is one year (3 terms) of full-time study, or the equivalent in part-time study.

3. **Courses.** The following are required:
   a. 6 credits from courses listed under *Topics*, in the general field of the student's research problem;
   b. Another 3 credits from courses listed under *Topics*, outside the student's research problem, acceptable to the advisory committee;
   c. CHEM 655: Master's Research and Thesis (33 credits);
   d. CHEM 666: Seminar (3 credits).
      This course provides an opportunity for the student to prepare and present materials concerning a current research problem in an area of chemistry or biochemistry to a critical audience. It is designed to give students practice at communicating and defending their ideas on a research topic in a professional forum, and should successfully inform a broad audience of chemists and biochemists.
   e. With permission from their advisory committee, students are allowed to take graduate level courses from other departments relevant to their research problems, as partial fulfillment towards their degree requirements.

4. **Thesis.** The thesis (CHEM 655) will be examined by the student's advisory committee before being accepted by the department. In addition, an oral examination will be conducted before a committee of the department to test the student's ability to defend the thesis.

5. **Seminars.** Each student is **required** to attend and participate in departmental seminars.

6. **Research Areas.** Areas for possible research are listed before the Doctor of/ Doctorate in Philosophy section.

7. **Cross-registration.** Students may, with the permission of their advisory committee, cross-register for courses falling in the *Topics* categories in other Québec institutions.

Academic Regulations

1. **GPA Requirement.** The academic progress of students is monitored annually. To be permitted to continue in the program, students must obtain a cumulative Grade Point Average (GPA) of 3.00 based on a minimum of 6 credits. Students whose GPA falls below 3.00 are considered to be on academic probation during the following review period. Students whose GPA falls below 3.00 for two consecutive review periods are withdrawn from the program.

2. **C Rule.** Students who obtain less than a grade of B- in a course are required to repeat the course or take another course. Students receiving more than one C grade will be withdrawn from the program.

3. **F Rule.** Students who receive a failing grade in the course of their M.Sc. studies will be withdrawn from the program. Students may apply for readmission. Students who receive another failing grade after re-admission will be withdrawn from the program.

4. **Time Limit.** All work for a master's/magisteriate degree for full-time students must be completed within 12 terms (4 years) from the time of initial registration in the program at Concordia University; for part-time students the time limit is 15 terms (5 years).

5. **Graduation Requirement.** In order to graduate, students must have a cumulative GPA of at least 3.00.

Courses

Specific course offerings in subject areas listed under *Topics* will generally vary from year to year, depending on the availability of faculty and the requirements of graduate students in the program. In the M.Sc. program, every student must complete CHEM 666 (Seminar); in the Ph.D. program CHEM 667 (Seminar), and CHEM 896 (Research Proposal and Comprehensive Examination) must be completed by every student.

Courses are worth 3 credits unless otherwise indicated. Over the next few years the department will offer a selection of courses from those listed below. Additional *Selected Topics* courses may be offered in a given year, and these

will be identified by different subtitles. Further information on Selected *Topics* courses will be available from the department at the beginning of each academic year.

Topics in Analytical & Bioanalytical Chemistry

CHEM 610 Selected Topics in Analytical Chemistry
CHEM 612 Analytical Separations
CHEM 613 Spectrochemical Analysis

Topics in Bioorganic & Organic Chemistry

CHEM 620 Selected Topics in Organic Chemistry
CHEM 621 Physical Organic Chemistry
CHEM 623 Organic Synthesis
CHEM 628 Advanced Bioorganic Chemistry

Topics in Physical Chemistry

CHEM 630 Selected Topics in Physical Chemistry
CHEM 631 Computational Chemistry
CHEM 632 Irreversible Thermodynamics
CHEM 633 Quantum Mechanics
CHEM 634 Surface Chemistry
CHEM 638 Physics and Chemistry of Solid State Electronic Materials

Topics in Bioinorganic & Inorganic Chemistry

CHEM 640 Selected Topics in Inorganic Chemistry
CHEM 643 Organometallic Chemistry
CHEM 644 Physical Methods in Chemistry
CHEM 645 Bioinorganic Chemistry
CHEM 646 Industrial Catalysis

Topics in Biochemistry

CHEM 670 Selected Topics in Biochemistry and Biophysics
CHEM 671 Structure and Function of Biomembranes
CHEM 674 Protein Targeting
CHEM 677 Enzyme Kinetics and Mechanism
CHEM 678 Protein Engineering and Design

Topics in Instrumentation

CHEM 690 Selected Topics in Instrumentation
CHEM 691 Magnetic Resonance Spectroscopy

Theses, Seminars, Comprehensive Exam and Special Courses

CHEM 655 Master's Research and Thesis (33 credits)
CHEM 666 Seminar (3 credits)
CHEM 667 Seminar (3 credits)
CHEM 668 Seminar (3 credits)
CHEM 855 Doctoral Research and Thesis (69 credits)
CHEM 896 Research Proposal and Comprehensive Examination (9 credits)

Communication Studies & Journalism Building, CJ 3.243
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Communication Studies

Faculty

Professors Emeriti: John Buell, John E. O'Brien, Gail Valaskakis; ***Professors:*** Martin Allor, William Buxton *(Ph.D. Program Director)*, Maurice Charland *(Chair)*, Nikos Metallinos; ***Associate Professors:*** Charles Acland, Monika Kin Gagnon, W.L. (Scot) Gardiner, Richard Hancox *(Diploma Program Director)*, Yasmin Jiwani, Andra McCartney *(M.A. Program Director)*, Dennis Murphy, Chantal Nadeau, Lorna Roth, Kim Sawchuk, Leslie Shade, Rae Staseson, Hal Thwaites, Peter Van Wyck; ***Assistant Professors:*** Elizabeth Miller, Matthew Soar.

Programs

When the Department of Communication Studies was founded in 1965, it was the first of its kind in Canada. In keeping with this ground-breaking tradition, the department has since gone on to develop three highly innovative graduate programs: a Ph.D. in Communication, a Master of/Magisteriate in Arts in Media Studies, and a Diploma in Communication Studies.

Program Objectives

The Joint Ph.D. in Communication, inaugurated in 1987 under the auspices of Concordia University, the Université de Montréal and the Université du Québec à Montréal, is the first communication program of its kind in Canada. Students enroll at one university, but courses are cross-listed and taught across the three universities. The bilingual nature of this degree requires that students understand spoken and written French and English, though they need only speak and write one of these languages. Because of its inter-university nature, students have access to a wide range of resources and expertise. In particular, the program serves as a meeting place for communication scholarship from a wide variety of research traditions, North American and European, anglophone and francophone.

Doctoral students may choose courses from six domains: ICTs (Information and Communication Technologies) and Society; Media and Cultural Studies; Discourse Studies; Organizational Communication and Networks of Communication; International Communication and Development; and Media Creation, Design and Practices.

The Master of/Magisteriate in Arts in Media Studies provides for the advanced study of the cultural and social aspects of media and communication.

It is designed to serve both media artists and professionals seeking to develop a critical understanding of their practice as well as students seeking to become scholars and researchers. The program offers a wide range of courses, with particular emphasis upon cultural studies, the form and institutional context of media, and the theory and philosophy of communication.

The Diploma Program provides an intensive introduction to the field of communication and is open to students possessing a bachelor's degree in a field other than communication. The program takes a broad approach to the study of modern media and communication and includes basic production courses in film and video, sound, and intermedia. An internship is also featured. Normally the program will be taken full-time and completed in one year (three terms).

Faculty Research Interests

Members of the Department of Communication Studies engage in an extremely varied range of research endeavours that, broadly speaking, examine the social, political, economic, and cultural dimensions of communication within contemporary societies. Issues and debates such as the rapid proliferation of new communication technologies, their current impact and future significance, national differences in communication-policy environments, private versus public broadcasting, the internationalization of communication and the significance of the latter for Canadian culture and identity are among a much larger spectrum of questions explored by graduate students. Doctoral candidates undertake primary research in the areas they have chosen as their specialization. Faculty research is extensive and spans such diverse areas as the nature and conception of audiences, cultural studies, rhetoric, future studies, history of communication, film production and policy, television aesthetics, feminism and cultural theory, development communication, political communication and the interface of technology and culture.

Doctor of/Doctorate in Philosophy (Communication)

Admission Requirements. Applicants must have a Master of/Magisteriate in Arts in Communication or its equivalent. Applicants will be selected on the basis of the excellence of their past academic records. Applicants must include a thoroughly articulated outline of a research project with their application.

Admission Criteria
- Excellence and pertinence of academic background.
- Promise as a scholar.
- Relevance of proposed research to the program.
- Feasibility of proposed research in terms of material and faculty resources.
- Ability to understand English and French.
- Availability of a faculty member to direct the applicant.

While there are no fixed quotas, admission is limited by the availability of the program's faculty to supervise students.

Language Requirements. Since this is a bilingual program, applicants must demonstrate a level of competence that would allow them to read technical material and follow lectures and discussions in **both English and French**. The ability to speak and write with facility in both languages is not required; students may participate in discussions, write reports, examinations and theses in English or French, as they choose. Applicants whose prior degrees are not from an English or French-speaking university are required to submit TOEFL scores. The minimum TOEFL score required is 623 (computer-based score 263).

Submitting an application. Applicants apply to the program through one of the participating universities. A detailed description of the program may be obtained from the departmental website at: http://artsandscience.concordia.ca/comm. Applicants should apply online at: http://welcome.concordia.ca/.

A completed application includes a completed university graduate admissions form, undergraduate and graduate transcripts, three letters of recommendation (two of which must be from scholars in the applicant's area), a description (approximately 1500 words) of the applicant's envisioned research, and an indication of the following:

- An assessment of the feasibility of the applicant's proposed research in terms of material and financial resources.
- The scholarships, fellowships and bursaries for which the applicant has applied.
- If possible, the faculty member who might direct the applicant's research.

Admission Procedures. The admissions committee, named by the Joint Program Committee, will review applications. This committee will then submit recommendations to the Joint Program Committee who will then recommend candidates for admission to the respective universities.

Application Deadlines. The application deadline is February 1. Earlier deadlines may apply for applicants seeking financial aid. Admission is done annually. Students must enter the program in the fall term.

Requirements for the Degree

1. **Credits.** A fully qualified candidate entering the program with a master's/ magisteriate degree is required to complete a minimum of 90 credits. These are apportioned as follows: courses and seminars, 21 credits; thesis proposal, 6 credits; and thesis, 63 credits. Typical progress in the program consists of:

Year 1

a. Courses and Seminars: four courses and seminars (12 credits) including the Integrative Seminar (COMS 800).
b. Synthesis examination: COMS 810. (non-credit)

Year 2

a. Courses and seminars: Doctoral Pro-seminar COMS 830 (6 credits) and one additional course or seminar from among the programs offerings (3 credits).
b. Doctoral Thesis Proposal: COMS 890 (6 credits).

Year 3

a. Thesis COMS 896 (63 credits).

2. **Residence.** The minimum period of residence is six terms including two summer terms of full-time study, or its equivalent in part-time study. Of this, three terms must be taken consecutively. Students will be assigned an academic advisor when they first register. Students will be required to choose a thesis director before the end of their third term in the program.

3. **Courses.** In order to favour inter-university exchange and broaden the training of the students enrolled in the program, all the program's courses are open to all students in the program, regardless of the university at which they are enrolled. All students must enroll in the Integrative Seminar COMS 800 (3 credits); the Doctoral Pro-seminar, COMS 830 (6 credits); and enroll in seminars and courses from among the Program's offerings for a total of 21 credits.

4. **Integrative Seminar.** The 3-credit Integrative Seminar is required for all students in the first year of the program. It is held every two weeks during the fall and winter semesters, and is organized and led by a bilingual faculty member. The course starts from the premise that students entering the program arrive with diverse prior training, and are interested in a wide range of fields of research. The principal pedagogical goal of the seminar is to engage students in an epistemological discussion regarding the diverse conceptual approaches to communication, as well as the range of research problematics elaborated in the field and in the program.

5. **Synthesis Examination.** Students must successfully pass an examination based on a list of readings at least one third of which is to come from the bibliography for the Integrative Seminar with the remaining two-thirds based on the student's interests. The jury for the examination consists of three professors, including the student's thesis director. The synthesis examination is a one-month take-home examination written in the month of July. The written portion of the exam is defended orally in August or September. It is recommended that students complete their exam within

the first two years of enrolment in the Joint Program. It is compulsory to finish the examination before registering in the Doctoral Pro-Seminar. It is also compulsory to finish the exam before completing the thesis proposal. Students who fail this examination are permitted to take it a second time in the following term. Students failing a second time are obliged to withdraw from the program. Students should consult the program regarding specific examination procedures and requirements.

6. **Doctoral Pro-seminar.** In order to promote the growth of an intellectual community within the program and an exchange among the program's four areas, students are required to register in the theory and research pro-seminar known as the Doctoral Forum. Students registered in this seminar are required to present a first draft of their thesis proposal. Students typically register in the doctoral forum in the second or third year of their studies. It is compulsory to finish the synthesis examination before registering in the Doctoral Forum. All members of the program are invited to attend the seminar.

7. **Thesis Proposal.** In the term following the completion of course work (usually the sixth term) students should submit a thesis proposal to their thesis director. Students must have completed the synthesis examination before registering for the thesis proposal. The thesis proposal should be completed within three years of the student's first enrolment. The proposal must be defended orally before a committee of three professors appointed by the program. This committee will usually be composed of members from at least two of the participating universities. Students must demonstrate the viability of their project and their capacity to undertake doctoral-thesis research. The proposal may be accepted, returned for modifications, or rejected. The rejection of a proposal will result in the student being withdrawn from the program. A student whose proposal is accepted will be admitted to candidacy for the Ph.D.

8. **Thesis Research.** All degree requirements, including the thesis, must be completed within six years of the student's first enrolment for full-time studies and eight years for part-time studies. The thesis must be based on extensive research in primary sources, make an original contribution to knowledge, and be in an acceptable literary form. For purposes of registration, this work will be designated as COMS 896: Thesis Research.

   The doctoral thesis is based on extensive primary research; the goal is to make an original contribution to knowledge. The traditional research thesis is ideally no less than 225 pages and no longer than 350 pages. It must be written in an acceptable literary form and represent a contribution to theoretical or empirical knowledge in the field of communication. Students also have the possibility to produce a *research–creation thesis* which is to meet the same standards of rigour as the traditional research thesis. The

research-creation thesis includes a practical component of creation or innovative production in the field of media/communications or digital/computerized communications, as well as a written component of approximately 150 pages demonstrating the contribution to the advancement of knowledge in the field. A digital reproduction of the practical component must be attached to the manuscript at the time of submission.

Academic Regulations

1. **GPA Requirement.** The academic progress of students is monitored on a periodic basis. To be permitted to continue in the program, students must obtain a cumulative grade point average (GPA) of 3.00 based on a minimum of 12 credits. Students whose GPA falls below 3.00 are considered to be on academic probation during the following review period. Students whose GPA falls below 3.00 for two consecutive review periods are withdrawn from the program.

2. **C Rule.** Students who receive more than one *C* during the course of their Ph.D. studies will be required to withdraw from the program. Students may appeal for readmission. Students who receive another *C* after readmission will be required to withdraw from the program and will not be considered for readmission.

3. **F Rule**. Students who receive a failing grade in the course of their Ph.D. studies will be withdrawn from the program. Students may apply for readmission. Students who receive another failing grade after re-admission will be withdrawn from the program.

4. **Time Limit.** All work for a doctoral degree must be completed within 18 terms (6 years) of full-time study or 24 terms (8 years) of part-time study from the time of initial registration in the program.

5. **Graduation Requirement.** In order to graduate, students must have a cumulative GPA of at least 3.00.

Domains and Courses

COMS 800 Integrative Seminar (3 credits)
This required course proposes to engage first-year students in an epistemological conversation concerning different approaches to the conceptualization of communication and to the range of research problematics elaborated in the field and in the program. The expected outcomes would include: a broad understanding of the relations between different domains within the discipline; the ability to recognize the links between epistemological assumptions, theory construction, the formation of research problematics and

methodological approaches; a familiarization with the main fields of strength within the program; and the development of the ability to engage in dialogue with colleagues in different domains of research. All of these outcomes should provide a strong formation in preparation for the synthesis examination.

ICTs (Information and Communication Technologies) and Society

COMS 841 Cultural Industries (3 credits)
This course examines commodification and industrialization processes as well as the dissemination and consumption of culture within contemporary social formations, while focusing on one or more sectors of the cultural industries. The analytical approach considers themes such as characteristics of merchandising cycles, work and market organization, symbolic and cultural specificity of cultural-industries products, and relationships between technological innovation and cultural form.

COMS 843 Communication Policy (3 credits)
This course examines the history and development of state intervention and regulation of the media. It may focus on communication policy nationally or internationally. The course considers such issues as the role of public policy in the development of public media and the public sphere, models of regulation and deregulation, the relations between regulatory agencies and interest groups, and the position of communication policies within larger governmental structures.

COMS 844 Uses of Information and Communication Technologies (ICTs) (3 credits)
Observing usage of information and communication objects and technical devices allows us to understand the effect of technologies within society. This course explores different theoretical and methodological approaches pertinent to analyzing ICT usages. With respect to course discussions and papers, particular attention may be paid to the interaction between user and technical device; articulation between artifact user and creator; usage situation within the organizational context; embedding of political dimensions in technological design; usage micro-situations and macro-sociological issues. Some major research traditions may be introduced, namely, dissemination of artifacts, sociotechnical innovation, common practices and significations, pragmatic approaches, social and socio-political appropriation of usages.

COMS 882 Communication, Democracy and Power (3 credits)
This course considers the communicative structure and performance of democracy within modern society. Attention is paid to the discursive resources available to perform and affect democracy, the constitution of democratic agents, the role of media in constituting and maintaining a public sphere, communicative

strategies, norms of regulation and power, the performance of difference and various aspects of public culture.

COMS 891 Communication Technologies and Society (3 credits)
This course introduces students to and contextualizes the main paradigms with respect to research on social, economic and cultural aspects of information and communication technologies. Critical analysis focuses on their epistemological assumptions and premises, main categories of analysis, and privileged issues. Attention is paid to the political economy of the information system.

Media and Cultural Studies

COMS 842 Media Reception (3 credits)
This course examines media reception. It explores different theoretical and methodological approaches to the study of individual group practices and cultural consumption. The course looks at case-study material drawn from specific media or media genres (e.g. popular music, téléromans, children's programming). The seminar considers such approaches as media ethnography, focus-group research, audience research, life histories, and other context specific micro-social approaches.

COMS 883 History and Historiography of Media and Culture (3 credits)
This course examines the development of communication technologies and the media in comparative and historical perspective. Themes of time, space, place and power and their reconfiguration in relation to media and communication are given particular attention. Class members are encouraged to think about how they might engage in research on the history of media as part of their dissertation projects. To this end, historiographical issues are examined throughout the course, along with methodological consideration given to how one works with documentary and archival records.

COMS 884 Cultural Theory in Communication Studies (3 credits)
This course introduces students to cultural studies and its entwinement with the development of the field of communications. Key readings in Marxist approaches to culture, British Cultural Studies, and its US and Canadian variants are covered in the first half of the course. The remaining weeks expand the national and conceptual specificity of the "cultural studies tradition". Topics include cultural and representational politics, issues of identity, resistance, hegemony, and ideology.

COMS 885 Popular Culture (3 credits)
This course focuses upon the political dimension of popular culture and the intellectual challenges it poses to scholarship. It concentrates upon the conceptual and historical aspects of the study of popular-cultural forms, their production and consumption, as well as their assessment. The course introduces key ideas and issues in popular-cultural studies, beginning with the rise of

interest in mass culture during the late 19th and early 20th centuries. It also encounters modes of examining and understanding popular texts and sites of popular consumption. Issues of subjectivity, community, ideology, cultural hierarchies, and mass society are addressed.

COMS 886 Alternative Media (3 credits)
This course examines the array of alternative communication practices that inform social movements emerging from the margins. It focuses on the conditions of their effectiveness and mechanisms that facilitate or impede their success, such as the external social forces that influence their cooptation, commodification and evacuation of revolutionary potential.

Discourse Studies

COMS 851 Speech Communication (3 credits)
This course examines discourse as action. Forms of discourse considered may range from interpersonal communication to public address. Possible theoretical approaches include ethnomethodology, conversational analysis, rhetorical theory, and performance studies.

COMS 853 Discourse and Representation (3 credits)
The course examines discourse with respect to representation. It focuses upon the structuring of knowledge and identity within sign systems. Emphasis may range from the cognitive and psychological to the social and cultural.

COMS 854 Discourse within Social Formations (3 credits)
This course examines discourse as social mediation. Possible themes include the interrelation of power and knowledge, the organization of culture through signifying practices, and the production of discourse and social institutions.

COMS 887 Strategies and Styles in Communication (3 credits)
This course considers the strategies and styles of communication as intentional symbolic activity. Communication is examined as a practice that responds to and transforms situations and contexts. Emphasis is placed on the form, manner, and consequences of such practices, as well as on the major paradigms informing different approaches to the study of discourse and mediated messages.

COMS 888 Discourses of the Body (3 credits)
Critical theorists have identified the body as a site of competing and multiple discourses. The course examines some of the ways in which different bodies have been constructed in the media and how these both constrain and provide latitude for the expression of identities. A central area of inquiry is the context of the historical and contemporary terrain that informs the expression and categorization of these identities.

Organizational Communication and Networks of Communication

COMS 861 Organizational Culture (3 credits)
This course examines how cultural analysis can be brought to bear in understanding organizational life. To this end, a range of theoretical approaches are drawn upon, including conversational analysis, ethnography, ethnomethodology, symbolic interactionism, enactment theory, and socio-linguistics. Aspects of organizations such as norms, rituals, folklore, traditions, common ideals, ideologies, shared symbols, core values and interaction are given particular attention.

COMS 864 Communication and Change in Organizations (3 credits)
This course addresses a major question within organizations at both theoretical and practical levels. It focuses on issues of innovation or transformation in an organizational framework using various approaches (functionalist, critical, post-modern, constructivist, interpretative). This perspective is pertinent for analyzing the context and process of change within cultural or development organizations as well as private, public or charitable undertakings.

COMS 875 Technology and Organization (3 credits)
This course analyzes and critiques various theoretical approaches which account for the relationship between technology and organization. It also provides the grounds for a communicational reflection on phenomena associated with the presence of information and communication technologies within organizations.

COMS 880 Communication Networks and Organization (3 credits)
This course examines and analyzes communication networks in a constructivist perspective with respect to two main "social-networks" traditions (anthropological and structural). It considers communication networks according to the themes explored by scholars in the field such as diffusion, social support and capital, organizational phenomena, social movements or ICTs. The seminar also includes methodological aspects of the study of communication networks, their emergence, and their transformation.

COMS 889 Theories of Organizational Communication (3 credits)
This course surveys and juxtaposes how some of the main approaches to organizational studies have dealt with issues related to communication. Paradigms considered may include scientific management, human relations, cybernetics, political economy, rational decision making, cultural studies, feminism, and post-modernism. An effort is made to examine how these various approaches emerged historically in relation to shifting patterns of power, inequality, and technological change. Issues such as the nature of bureaucracy, domination and resistance, systematically distorted communication, and public relations/external communication are addressed.

International Communication and Development

COMS 873 Identities and Cultural Exchange (3 credits)
Within the context of electronic, information, and market-globalization forces, traditional geopolitical borders have become porous and easily penetrable. This course focuses on the hybrid identities emergent and negotiated from cross-cultural engagements and transnational communication at the beginning of the 21st century. Curricular materials include theoretical readings, case studies, and audiovisual materials focused on bridging cultural and political gaps.

COMS 874 Globalization of Communication (3 credits)
This course examines the emergence of a global communication system. Possible topics include international information flow, the circulation of communication products and communication issues as they are reflected in international accords and debates, and the role of media in issues of cultural development, democratization, and resistance to globalization.

COMS 877 International Communication and Development (3 credits)
This course traces the history of the different paradigms related to communication and development. It proposes a critical analysis of the theoretical perspectives suggested in both Southern and Northern contexts. The topics considered include Canadian and foreign institutions, policies, and programs, the role of international fora, as well as globalization and development. Case studies may focus on a specific region of the world.

COMS 878 Communication, Conflict and Peace (3 credits)
This course examines the various ways in which discourses of war, conflict, and peace are constructed and relayed through the mass media and other forms of technologically-mediated communication. In particular, how do the inherent properties of different modes of communication intersect with larger discursive formations to reproduce dominant definitions and unquestioned categories of social knowledge related to issues of peace and conflict? What role do the media play in shaping our understanding of war and warfare? How does the internet contribute to promoting both conflict and peace? How is peace represented as an end state that is desirable; for whom is peace being constructed; and what are the kinds of actions being promoted or encouraged in the name of peace?

Media Creation, Design and Practices

COMS 876 Media Technology as Practice (3 credits)
This course examines relationships between theory and practice in the work of individuals and groups of media practitioners across a range of genres and working contexts. Analysis can focus on the organization of the workplace, the creative process and social forces influencing media praxis.

COMS 879 Human-Computer Interactions (3 credits)
This seminar examines human-computer interaction models and research in various fields of media communication; virtual worlds, e-commerce, distance education, sharing of knowledge and resources, adaptive technologies, systems intelligence and customization. Other topics include principles of interface design and assessment in cognitive ergonomics.

COMS 892 Epistemology and Methodology of Media Creation (3 credits)
This seminar seeks to develop a position of poiesis (production) and to differentiate it from the position of aisthesis (reception). In order to define the multiple aspects of media creation, the following themes will be discussed; creationistic accounts and theses; the spectacle as ritual, achievement and imitation of reality; agents, machines and living organisms; functions of transmitting information and story telling. Operational concepts considered include granularity, linearity, interactivity, diegesis, spatialization, indexicalization, enuciation, etc.

COMS893 Advanced Seminar in Special Topics in the Joint Ph.D. in Communication (3 credits)
This seminar permits the in-depth examination of particular special topics in media and communication. Topics vary from year to year.

Examinations and Research

COMS 805 Research Workshop (3 credits)
This research workshop is supervised by the student's thesis director and is intended to respond to a particular need unfulfilled by the program. It can take various forms, namely a directed readings program, a specific project within a research group, an elective course (including a masters level course) or a research or creation internship. The research workshop must be defined in a specific agreement between the thesis supervisor and the student, which shall be approved by the program director and added to the student's file.

COMS 810 Synthesis Examination (non-credit)

COMS 822 Advanced Seminar in Research Methods I (3 credits)
This course provides an in-depth analysis of methodological problematics. Major contemporary methods of analysis will be considered. Possible themes include research design, data-gathering techniques and instruments, and qualitative or quantitative procedures for data analysis. Specific topics may vary from year to year.

COMS 823 Advanced Seminar in Research Methods II (3 credits)
Students who have registered for COMS 822 will register for COMS 823 when taking a second Advanced Seminar in Research Methods course.

* Topics vary and are determined by the Joint Program Committee.

COMS 830 **Doctoral Pro-seminar** (6 credits)
COMS 890 **Thesis Proposal** (6 credits)
COMS 896 **Doctoral Thesis Research** (63 credits)

Master of/Magisteriate in Arts (Media Studies)

Admission Requirements. Normally the candidate must have a bachelor's degree in communication (or equivalent) in a cognate area with a minimum of a B average. Experience in media or a media-related field is an asset. Applicants whose prior degrees are not from an English or French-speaking university are required to submit TOEFL scores. The minimum TOEFL score required is 623 (computer-based score is 263). Qualified applicants requiring prerequisite courses may be required to take up to 12 credits in addition to and as part of the regular graduate program. Applicants with deficiencies in their undergraduate preparation will normally be required to take a qualifying program. Credits allowed for previous graduate work must be determined by the department and the university prior to entry to the program.

Application Deadlines. A detailed description of the program may be obtained from the departmental website at: http://artsandscience.concordia.ca/comm. Applicants should apply online at: http://welcome.concordia.ca/. The deadline for completed applications is February 1.

Requirements for the Degree

1. **Credits.** Fully-qualified candidates are required to complete a minimum of 45 credits.

2. **Residence.** The minimum residence requirement is one year (3 terms) of full-time study, or the equivalent in part-time study.

3. **Courses.** Students may enter one of the three options I, II or III outlined below. Students elect an option after their first term of study with permission of the program director. The project option III is restricted to students with adequate and appropriate media experience. The program does not provide media training.

Academic Regulations

1. **GPA Requirements.** The academic progress of students is monitored on a periodic basis. To be permitted to continue in the program, students must obtain a cumulative grade point average (GPA) of 3.00 based on a minimum of 12 credits. Students whose GPA falls below 3.00 are considered to be on academic probation during the following period. Students whose GPA falls

below 3.00 for two consecutive review periods are withdrawn from the program.

2. **C Rule.** Normally a student receiving a grade of C in two courses will be required to withdraw from the program. Students withdrawing for this reason may petition the M.A. (Media Studies) Committee for special consideration. In cases of extenuating circumstances, probationary continuation in the program will be considered.

3. **F Rule.** Students who receive a failing grade in the course of their studies will be withdrawn from the program. Students may apply for readmission. Students who receive another failing grade after re-admission will be withdrawn from the program.

4. **Time Limit.** All work for a master's/magisteriate degree for full-time students must be completed within 12 terms (4 years) from the time of initial registration in the program at Concordia University; for part-time students the time limit is 15 terms (5 years).

5. **Graduation Requirement.** In order to graduate, students must have a cumulative GPA of at least 3.00.

Master of/Magisteriate in Arts with Thesis (Option I)

Candidates are required to take the following:
1. 9 credits: COMS 600: Communication Theory; COMS 605: Media Research Methods I; COMS 608: History of Media;
2. 15 credits, chosen in consultation with the student's faculty advisor and approved by the department's graduate studies committee. If approved by the department's graduate studies committee, and with the permission of the department concerned, up to 9 of these credits may be taken in cognate graduate courses offered by other departments of the university;
3. 21 credits, COMS 695: Thesis.

Master of/Magisteriate in Arts with Courses (Option II)

Candidates are required to take the following:
1. 9 credits: COMS 600: Communication Theory; COMS 605: Media Research Methods I; COMS 608: History of Media;
2. 36 credits, chosen in consultation with the student's faculty advisor and approved by the department's graduate studies committee. If approved by the department's graduate studies committee, and with the permission of the department concerned, up to 9 of these credits may be taken in cognate graduate courses offered by other departments of the university.

Master of/Magisteriate in Arts with Project (Option III)

Candidates are required to take the following:
1. 9 credits: COMS 600: Communication Theory; COMS 605: Media Research Methods I; COMS 608: History of Media.
2. 15 credits, chosen in consultation with the student's faculty advisor and approved by the department's graduate studies committee. If approved by the department's graduate studies committee, and with the permission of the department concerned, up to 9 of these credits may be taken in cognate graduate courses offered by other departments of the university;
3. 21 credits, COMS 697: Project

Courses

All courses are worth 3 credits.

COMS 600 Communication Theory
This seminar studies and evaluates the major historical and contemporary approaches to communication theory. The following approaches are covered: Processes and Effects, Functionalism; Symbolism and Cultural Studies; Institutional Studies and Political Economy.

COMS 605 Media Research Methods I
This seminar prepares students to critique literature from any of the major research traditions; to make basic connections between epistemology and problems of basic communication research; to be able to identify the research method most appropriate to personal areas of interest; to design a basic research project.

COMS 606 Media Research Practicum
This course is an individual research practicum offered on a tutorial basis under faculty supervision. It may be used to develop advanced skills in a particular media research methodology. For students enrolled in the thesis or project options, this course is used to develop the analytic or creative research program necessary to accomplish the thesis or project.
Prerequisite: COMS 605 and permission of the Graduate Program Director.

COMS 608 History of Media
This seminar examines the development of communications technology and the media in a comparative and historical perspective. Topics include the transition from orality to literacy, the print revolution, the rise of new image technologies and the mass press in the nineteenth century, electronic media and the modern nation-state, global information, and the emergence of a world media system.

COMS 614 News and Public Affairs
This seminar examines the principles and discourses of news and public affairs media. The truth-value of news and public affairs programming is considered in the light of selectivity of reporting, changes in news formats, and the emergence of "infotainment." Topics may include institutional structures, organizational routines, ideologies, and norms of representation that influence the construction of the news.
Note: Students who have received credit for COMS 611, 612 or 655 may not take this course for credit.

COMS 622 Media Law
This seminar examines legislation relevant to the creation and distribution of media products. Topics may include copyright, libel, freedom of expression and censorship, privacy and contracts.

COMS 624 Media Management
The course is designed to provide participants with a practical and theoretical understanding of such aspects of management in the media enterprise as: leadership styles; goal setting; strategic planning; labour relations; ethics; budget control; communications consulting; and effectiveness evaluation. During the course, participants will examine various practices and problems in media management. The course begins with an analysis of management theory and relates to media institutions organizations. In addition, the program provides for advanced study of the social and cultural implications of communications and informations media, and of the analysis of the theory and professional practices of mass media institutions.

COMS 627 Political Economy of Communication
This seminar focuses on issues and problems related to media and cultural industries. Special attention is given to the production and distribution of cultural commodities. Topics for examination include the question of media ownership, the role of state agencies in media systems, and the economics of media institutions.
Note: Students who have received credit for COMS 626 may not take this course for credit.

COMS 628 Organizational Communication
This seminar considers major approaches to organizational communication, particularly as they relate to media enterprises. Various paradigms are considered both as theoretical frames and as forms of social practice that have emerged in relation to shifting patterns of power, inequality, and technological change. Topics may include communication networks, organizational culture, the nature of bureaucracy, systematically distorted communication, gendered communication, the impact of new communication technologies, and patterns of organizational domination and resistance.

COMS 630 Communication, Development, and Colonialism
This seminar focuses on theoretical, and political issues related to interpersonal and mediated communication in developing areas. Topics may include: the forms of colonialism (neo- and post-) cultural domination, participatory development, women and minority constituency groups, sustainable development, and globalization.

COMS 632 Media and Contemporary Culture
This seminar investigates the influence of contemporary media systems on cultural values. Special attention is given to the question of consumption of popular culture and to recent developments in cultural theory. Topics may include: media constructions of nation and identity, media consumption patterns, political culture, popular and entertainment culture.

COMS 634 International Communication
This course explores the manner in which culture, ethnicity and other factors interact and are transformed through the international flow of information, images, and technologies. The international relationship between media, communication institutions, and constituency groups is considered. Topics may include: the analysis of genres and images, issues of cultural and media imperialism, the global information infrastructure; national sovereignty perspectives, and international broadcasting.

COMS 635 Feminist Theory and Media
This seminar examines concepts and principles from feminist theory in relation to the study of media and communication. Topics may include: theories of gender, sex and sexuality, psychoanalytic theory, materialist cultures, bodies and geographies, technologies, and visual cultures.
Note: Students who have received credit for COMS 642A may not take this course for credit.

COMS 636 Ethics and Media
This seminar examines concepts and principles from ethical theory in relation to the study of media and communication. Possible topics include the ethical implications of media practices, the responsibility of media producers and audiences, the relationship of ethics to the pragmatics of communication, ethics and *ethos*, and the ethical implications of technology.
Note: Students who have received credit for COMS 620 may not take this course for credit.

COMS 640 Directed Study
Students may enroll in a directed study under faculty supervision in order to undertake a specialized study of theoretical or research-related topics. Permission of the Graduate Program Director is required.

COMS 642 Special Topics in Media Studies
This seminar permits the in-depth examination of particular special topics in media and communication. Topics will vary from year to year.

COMS 644 Media Policy
This seminar studies particular sectors of media policy and regulation in Canada. The policy sector under discussion may change from year to year and both historical and contemporary issues will be examined. Topics may include: broadcasting, film, satellite and cable distribution, multiculturalism, northern and remote access, telecommunications, and the internet.

COMS 646 Alternative Media
This seminar explores various alternative and resistant practices to mainstream media, including community radio and television, artists and community video, independent film, underground/pirate media, the internet, and other emergent cultural forms. Topics may include: practices and theories of the alternative, methods of critical analysis, media monopolies, democracy and resistance, cultural imperialism, culture jamming, and the possibilities of new technology-based forms.

COMS 652 The Canadian Documentary
This course examines non-fiction film, television and other media in Canada. Materials considered may include the documentary work of the National Film Board, independent film and video, and television docu-drama. These are examined from a variety of perspectives such as history, form and textuality, institutional analysis, and culture.

COMS 656 Forms and Genres in Communication
This seminar examines specific patterns in cultural forms and texts. Attention is paid to the production, consumption, and textual attributes of genres. Topics vary from year to year, and may include a focus on advertising, public advocacy, documentary, popular music, situation comedy, or feminist feature film.

COMS 660 Definitions and Futures of Media and Technology
This seminar explores the social, cultural, and psychological aspects of media and technology. Media are considered as both containers and expressions of culture. In addition, this seminar focuses on the impacts of new technologies and media. Topics may include the interaction of media and culture, the role of technology in the development of human consciousness and values, and the future of media in the light of emergent technologies and practices.
Note: Students who have received credit for COMS 643 or COMS 658 may not take this course for credit.

COMS 662 Theories of Representation and Interpretation in Communication
This course examines discourse and media texts as forms of representation. Representation is considered in terms of both figure and argument. The course

also presents theoretically-informed approaches to the interpretation and criticism of discourses and media texts. Possible theoretical approaches include rhetoric, semiotics, hermeneutics, and speech-act theory.

COMS 670 Directed Study
Students may enroll in a directed study under faculty supervision in order to undertake a specialized study of theoretical or research-related topics. Permission of the Graduate Program Director is required.

COMS 680 Aesthetics and Media
This seminar examines concepts and principles from aesthetic theory in relation to the study of media and communication. In addition to considering general aesthetic principles, the course may focus on particular aural or visual media. Topics may include the relationship of medium to aesthetic form, aesthetics and reception theory, aesthetics and ideology, the mass reproduction and distribution of aesthetic objects, and the aesthetics of new media.

COMS 684 Media Research Laboratory
This production-based seminar explores the intersections of analog, electronic and digital media with a special emphasis on their convergence. Topics may include digital imaging, multimedia information design and programming, three dimensional media, virtual reality, world-wide-web, hypertext and hypermedia publishing.

COMS 695 Thesis (21 credits)
Near the end of course work completion, a thesis director is selected by the student or appointed by the Graduate Program Director. The thesis topic and research plan are put into a formal proposal and submitted to a Thesis committee and the Graduate Program Director for approval. The thesis is submitted in written form and is between 20,000 and 30,000 words in length. The thesis format must be commensurate with Graduate Studies regulations and in a format stipulated by the rules of the Thesis Office. The thesis is defended in an oral examination.

COMS 697 Project (21 credits)
Students choosing Option III may prefer to do a special project that employs one or more media. Normally this would have a creative and/or documentary intent. Near the end of course work completion, a Project supervisor is selected by the student or appointed by the Graduate Program Director. The Project topic and research plan are put into a formal proposal and submitted to a Project Committee and the Graduate Program Director for approval. Upon completion, the Project is submitted in whatever media form/s are appropriate to the Project's goals. The Project is supported by a written report, approximately 6000-8000 words, which is a reflective and critical commentary on the process of bringing the project to completion. This may include the methods, theories, history of the project, literatures or media reviewed, or other areas deemed

necessary by the student and the student's Project Committee. The project is defended in an oral examination.
Note: Students who have received credit for COMS 696 may not take this course for credit.

Diploma in Communication Studies

The Diploma Program provides an intensive introduction to the field of communication. It is open to students who possess a bachelor's degree in a field other than communication. The program takes a broad approach to the study of modern media and communication and includes basic production courses in film and video, sound, and intermedia. An internship can also be undertaken. Normally the program will be taken full-time and completed in one year (3 terms).

Admission Requirements. Entry into the program is based on a careful assessment of the individual backgrounds and goals of applicants who possess a bachelor's degree (or equivalent) with high standing from a recognized institution in a field other than communication. Applicants are required to submit a letter of intent of no more than 600 words outlining their background, academic and work experience, and career goals. Applicants whose prior degrees are not from an English or French-speaking university are required to submit TOEFL scores. The minimum TOEFL score required is 623 (computer-based score 263).

Application Deadlines. A detailed description of the program may be obtained from the Department website at:
http://artsandscience.concordia.ca/comm/diploma.html. Applicants should apply online at: http://welcome.concordia.ca/. The deadline for completed applications is February 1.

Requirements for the Diploma

1. **Credits.** Fully-qualified candidates are required to complete a minimum of 33 credits.

2. **Courses.** All candidates are required to take 15 credits in core courses, and 18 credits in elective courses chosen in consultation with the Diploma Program Director.

Academic Regulations

1. **GPA Requirements.** Students having completed at least four courses are assessed at the end of each academic year based on creditable courses completed after their first registration in the program. To be permitted to

continue, students must have obtained a cumulative grade point average of at least 2.70.

2. **C Rule.** Normally a student receiving a grade of *C* in two courses will be required to withdraw from the program. Students withdrawing for this reason may petition the Diploma Committee for special consideration. In cases of extenuating circumstances probationary continuation in the program will be considered.

3. **F Rule.** Students who receive a failing grade in the course of their studies will be withdrawn from the program. Students may apply for readmission. Students who receive another failing grade after re-admission will be withdrawn from the program.

4. **Time Limit.** All work for a diploma program must be completed within 6 terms (2 years) from the time of initial registration in the program for full-time students; for part-time students the time limit is 12 terms (4 years).

5. **Graduation Requirement.** In order to graduate, students must have a cumulative GPA of at least 2.70.

Courses

All courses are 3-credit one-term courses unless otherwise stated.

Core Courses (Group A)

COMS 505 Definitions of Media and Technology I
This seminar-lecture course intends to situate media and technology in their historical and cultural contexts, to examine them as extensions of human perception and work, to consider forecast relationships, and to explore the epistemics of communication media.

COMS 506 Definitions of Media and Technology II
This course is a continuation of COMS 505. It is an exploration of media as a symbolic environment or as "containers" of culture. It provides a grounding for the art of media interpretation through an interdisciplinary approach to the interaction of media and culture, technology and human values and cross-cultural communication.

COMS 562 Media Production: Sound
This course is designed to provide the student with a basic working knowledge of audio systems both natural and electronic, to understand the various affective and psychological qualities of sound, and how sound may be structured into imaginative aural form. Lectures and Laboratory: average 6 hours per week.

COMS 569 Media Production: Film and Video
This course provides a foundation in the creative, critical and technical aspects of 16mm film and digital video production, including an introduction to non-linear editing software. Through collaborative assignments, students discover the shared and distinct language of each medium. Lectures and Laboratory: average 6 hours per week.
Note: Students who have received credit for COMS 567 (Television) or COMS 568 (Film) may not take this course for credit.

COMS 570 Media Production: Intermedia
This course provides an introduction to new and developing digital technologies (primarily computer-based media) through historical, theoretical, and critical perspectives on media, culture, and society and includes basic concepts in software operating systems, communication design and digital media creation. Lectures and Laboratory: average 6 hours per week.

Elective Courses (Group B)

A selection from the following courses will be offered. Information about the particular offerings in a given year is available from the department.

COMS 503 **Advanced Scriptwriting** (6 credits)
COMS 510 **Studies in Cinema I**
COMS 511 **Studies in Cinema II**
COMS 515 **Documentary Film**
COMS 516 **Advanced Topics in Documentary Film and Television Genres**
COMS 517 **Advanced Topics in Film Studies**
COMS 520 **Film Aesthetics: Contemporary Sensibility and Criticism**
COMS 521 **Communication Technologies and Gender**
COMS 525 **Seminar in Media Forecast**
COMS 526 **Television Aesthetics I**
COMS 527 **Television Aesthetics II**
COMS 530 **Selected Topics in Communication Studies**
COMS 532 **Communication, Culture and Popular Art**
COMS 533 **Semiotics**
COMS 535 **Media and Development**
COMS 537 **Race, Ethnicity and the Media**
COMS 538 **Organizational Communication**
COMS 539 **Political Communication**
COMS 548 **Broadcast Policy in Canada**
COMS 550 **Communication Research Methods**
COMS 558 **Advertising and the Consumer Society**
COMS 559 **Public Relations: Principles and Problems**
COMS 560 **Selected Topics in Communication Studies**
COMS 565 **Media Information Analysis and Design**

COMS 580 **Selected Topics in Communication Studies**

COMS 583 **Internship in Communication Studies**
This course makes it possible for students to observe, study and work in the communications media field of their choice under the supervision of a Communication Studies faculty member and a media professional in the field. Permission of the Graduate Program Director is required.
Note: There is no remuneration for students participating in internships.

COMS 585 **Directed Study in Communication Studies**
This course may be repeated as COMS 586.
Students may enroll in a directed study under faculty supervision in order to undertake a specialized study of research-related topics. Permission of the Graduate Program Director is required.

COMS 586 **Directed Study in Communication Studies**
Prerequisite: COMS 585.
Students may enrol in a directed study under faculty supervision in order to undertake a specialized study of research-related topics. Permission of the Graduate Program Director is required.

1455 de Maisonneuve W., Room H-1155-53
Tel.: 848-2424 ext. 3901; Fax: 848-4536

Economics

Faculty

Distinguished Professor Emeritus*:** Gordon Fisher *(Graduate Program Director);* ***Professors Emeriti*:** Jaleel Ahmad, Shafiq Alvi, Anastas Anastasopoulos, Balbir S. Sahni; ***Professors*:** Syed Ahsan, Ian Irvine (*Undergraduate Program Director),* James McIntosh, Frank Muller, William Sims *(Chair)*; ***Associate Professors*:** Bryan Campbell, M. Nural Islam, Greg LeBlanc, Zeng Rung Liu, Dan Otchere *(Director Co-Op),* Michael Sampson, Eckhard Siggel, Christian Sigouin; ***Assistant Professors: Effrosyni Diamantoudi, Nikolay Gospodinov, Jörgen Hansen, Masayuki Hirukawa, Seung Hyun Hong, Susumu Imai, Sun-Bin Kim, Ming Li, Dipjyoti Majumdar, Toshihiko Mukoyama.

Programs

The Department of Economics offers the degrees of Doctor of/Doctorate in Philosophy, Master of/Magisteriate in Arts and Diploma in Economics.

Program Objectives

The study of economics has changed considerably over the past twenty years, influenced mainly by the advent of mathematical and econometric methods of analysis. While it was once possible to gain a fairly broad knowledge of the subject at the undergraduate level, this target is now more difficult to achieve. Consequently, the graduate programs are designed to provide students with a broadly based knowledge of the theories, quantitative methods and applications of economics. At the doctoral level, students specialize by choosing two areas in which to pursue advanced course work and research, while at the master's level one field at a less advanced level is required. The Diploma in Economics is designed to provide students, who already hold a first degree, with a more specialized knowledge of economics. The emphasis of the Diploma is on applications and policies as opposed to the purely theoretical aspects of economics.

Courses are offered in economic development and planning, economic theory, econometrics, financial economics, game theory, industrial economics, international economics, labour economics, and public economics.

Faculty Research Interests

Areas of expertise among faculty include: economic development and planning; economic dynamics; econometrics; environmental and natural resources economics; financial and monetary economics; game theory; industrial

organization; international trade and finance; labour economics; microeconomics; macro-economics; public economics; and regional economics. Departmental expertise is sufficiently comprehensive to permit the evolution of other specialized areas of research.

Doctor of/Doctorate in Philosophy (Economics)

Admission Requirements. A Master of/Magisteriate in Arts in Economics from a recognized university with a cumulative GPA of 3.50 or equivalent. Students with a high standing in a master's degree or equivalent in other fields, such as commerce, mathematics or business administration from a recognized university may be admitted, subject to satisfactory completion of qualifying requirements, if necessary. Students with a B.A. (honours) or equivalent with high standing in economics may apply for admission directly to doctoral studies.

TOEFL Requirement. The Department of Economics recommends students for admission with a TOEFL score of at least 580 (or 237 for computer-based total). A score of 5.0 or above in the essay section (TWE) is also required.

Application Deadlines. The deadline for completed applications is May 1 for the Fall term and October 1 for the Winter term.

Requirements for the Degree

1. **Credits**. A fully-qualified candidate entering the program with a master's degree is required to complete a minimum of 90 credits.

2. **Residence**. The minimum period of residence is two calendar years (6 terms) of full-time graduate study beyond the master's degree, or three calendar years (9 terms) of full-time graduate study beyond the bachelor's degree for those permitted to enroll for doctoral studies without completing a master's degree. A period of full-time study, allowed or required by the Department to be spent at another institution with adequate research facilities, may be offered towards partial fulfillment of the residence requirements for the degree of Ph.D. at Concordia University. In each case, the Department must obtain approval of the Council of Graduate Studies.

3. **Courses**. All Ph.D. candidates must take seven one-term graduate courses (21 credits) selected from the Departmental offerings which must include ECON 681: Econometric Theory II and one of ECON 614: Advanced Micro Theory or ECON 617: Advanced Macro Theory. Students entering the program directly with an honours bachelor's degree must complete Microeconomics I (ECON 612) and II (ECON 613), Macroeconomics I (ECON 615) and II (ECON 616) and Econometrics I (ECON 680) in addition to 8 one-term graduate courses, two of which must be ECON 681 and ECON 614 or ECON 617. All students entering with a master's degree must include Microeconomics I (ECON 612) and II (ECON 613), Macroeconomics I (ECON

615) and II (ECON 616) and Econometrics I (ECON 680) in addition to the minimum seven one-term courses required, unless these (or their equivalent) have already been taken as part of the Master of/Magisteriate in Arts program. A recognition of past graduate work as partial fulfillment of the course requirements for the Ph.D. degree is at the discretion of, and subject to the approval of, the Graduate Program Director and the Dean of Graduate Studies. (See the regulation concerning transfer credits in this calendar.)

4. **Research Seminar**. All candidates must take ECON 806: Doctoral Research Seminar (6 credits) requiring the presentation of a paper. This seminar is intended to aid in the development of a doctoral thesis proposal.

5. **Comprehensive Examinations.** All candidates must pass three examinations (6 credits) in the areas of: Microeconomic Theory, Macroeconomic Theory and Econometrics. Each of these examinations is set, read and marked by members of the Department. These examinations must be passed before a student enrolls in ECON 806.

6. **Fields of Specialization.** Each Ph.D. student must have 2 fields of specialization, either as part of the degree of M.A. or within the students' Ph.D. program. In order to do this the student must successfully complete 2 courses from the sequences offered in any of the following fields: Economic Development and Planning; Financial Economics; Industrial Economics, International Economics; Labour Economics; Public Economics; or 3 courses in one of Econometrics, Macroeconomics or Microeconomics.

7. **Language Requirement.** Ph.D. candidates must pass an examination in French. International students may, with the approval of the Department, replace French with another language in which there exists a sufficiently large economics literature.

8. **Thesis.** A candidate who has passed the Ph.D. comprehensive examinations must submit in writing to the Graduate Program Director a detailed proposal of a thesis topic. Candidates proceed to work on the thesis (57 credits) only after obtaining approval of the topic from both the Graduate Studies Committee in the Department and the thesis supervisor.

Academic Regulations

1. **GPA Requirement.** The academic progress of students is monitored periodically. To be permitted to continue in the program, a student must obtain a cumulative grade point average (GPA) of 3.00 based on a minimum of 12 credits. Students whose GPA falls below 3.00 are considered to be on academic probation during the following review period. Students whose

GPA falls below 3.00 for two consecutive review periods are withdrawn from the program.

2. **C Rule.** Students who obtain less than a grade of B- in a course are required to repeat the course or take another course. Students receiving more than one C grade will be withdrawn from the program.

3. **F Rule.** A student who receives a failing grade in the course of a Ph.D. program will be withdrawn from the program. Students may apply for re-admission. A student who receives another failing grade after re-admission will be withdrawn from the program.

4. **Time Limit.** All work for the degree of Ph.D. must be completed within 18 terms (6 years) of full-time study or 24 terms (8 years) of part-time study from the time of initial registration in the program.

5. **Graduation Requirement.** In order to graduate, students must have a cumulative GPA of at least 3.00.

Master of/Magisteriate in Arts (Economics)

Admission Requirements. An honours degree in economics, from a recognized university, or the equivalent, with a cumulative GPA of 3.50 is required. An applicant may be required to take up to 12 prerequisite undergraduate credits in addition to, but as part of, the regular graduate program. Some applicants may be required to pass a qualifying program, as a condition for entry into the regular M.A. program.

TOEFL Requirement. The Department of Economics recommends students for admission with a TOEFL score of at least 580 (or 237 for computer-based total). A score of 5.0 or above in the essay section (TWE) is also required.

The Economics Co-operative Program is offered to those enrolled in an M.A. Program in Economics. The academic content of the Co-operative Program is identical to that of the regular program, but three Study Terms are interspersed with two Work Terms. Students are supervised personally and must meet requirements specified by the Faculty of Arts and Science, the School of Graduate Studies and the Institute for Co-operative Education. As employment opportunities primarily exist in the Canadian public sector, the program is presently restricted to Canadian citizens.

Application Deadlines. The deadline for completed applications is May 1 for the Fall term and October 1 for the Winter term.

Requirements for the Degree

1. **Credits**. A fully-qualified candidate is required to complete a minimum of 45 credits.

2. **Residence**. The minimum residence requirement is one year (3 terms) of full-time study, or the equivalent in part-time study.

3. **Courses.** A fully-qualified candidate is required to take three 3-credit courses Microeconomics I (ECON 612), Macroeconomics I (ECON 615) and Econometrics I (ECON 680) and five additional 3-credit courses selected in consultation with the Graduate Program Director.

4. **Research Paper**. Each student must write a research paper (ECON 703, 21 credits) demonstrating an application of knowledge in a particular area of economics. The topic of the research paper must be approved by the Graduate Program Director and a full-time member of the Department who is prepared to act as supervisor. The research paper is prepared under the guidance of the supervisor who must approve and recommend the final version for examination by an independent member of the Department appointed by the Graduate Program Director.

5. **Fields of Specialization**. Each M.A. student is required to complete one field of specialization by successfully completing 2 courses from the sequences offered in any of the following areas: Econometrics, Economic Development and Planning; Financial Economics; Industrial Economics; International Economics; Labour Economics; Macro-economics; Microeconomics; Public Economics.

Academic Regulations

1. **GPA Requirement.** The academic progress of students is monitored periodically. To be permitted to continue in the program, a cumulative grade point average (GPA) of 3.00 based on a minimum of 12 credits, is required. Students whose GPA falls below 3.00 are considered to be on academic probation during the following review period. Students whose GPA falls below 3.00 for two consecutive review periods are withdrawn from the program.

2. **C Rule.** Students in master's programs are allowed to receive no more than one C grade in order to remain in good standing in the university.

3. **F Rule.** Students who receive a failing grade in the course of their studies will be withdrawn from the program. Students may apply for re-admission. Students who receive another failing grade after re-admission will be withdrawn from the program.

4. **Time Limit.** All work for the degree of M.A. by full-time study must be completed within 12 terms (4 years) from the time of initial registration in the program at Concordia University; for part-time students the time limit is 15 terms (5 years).

5. **Graduation Requirement.** In order to graduate, a student must have a cumulative GPA of at least 3.00.

Courses

Graduate courses offered by the Department of Economics fall into the following categories:

ECON 610-619	**Economic Theory**
ECON 620-629	**Economic Development and Planning**
ECON 640-645	**Financial Economics**
ECON 656-658	**Public Economics**
ECON 660-669	**International Economics**
ECON 670-674	**Industrial Economics**
ECON 675-679	**Labour Economics**
ECON 680-689	**Econometrics**
ECON 690-693	**Mathematical Economics**

Elective Courses

A selection from the following courses will be offered each year. Information about the particular offerings in a given year is available from the Department. All courses are one-term, 3 credit courses.

Economic Theory

ECON 612 Microeconomics I
This course is devoted to modern consumer and producer theories. For the purposes of this course, consumer theory is presented first, and at some length, due to its inherent importance, as well as the overlap between the methods and results in this area and in producer theory. Producer theory is dealt with next. In this section of the course, the similarities and differences between these two important building blocks of modern microeconomics are emphasized.

ECON 613 Microeconomics II
This course covers a number of topics in microeconomic theory. These may vary from year to year but will typically include general equilibrium theory and welfare economics, topics in the theory of information, contracts and principal-agent problems, and selected topics in game theory. *Prerequisite:* ECON 612.

ECON 614 Advanced Micro Theory
This is an advanced course in microeconomic theory, designed for the needs of Ph.D. students. General equilibrium and welfare economics are treated at a more advanced level than in ECON 613. In addition, specific topics in the theory of imperfect information, the economics of uncertainty, and the allocation of resources over time are dealt with.

ECON 615 Macroeconomics I
The objective of this course is to introduce students to advanced theories and mathematical tools for rigorous analysis of various macroeconomic issues. Topics covered include consumption, investment, inflation and economic growth theories including Solow, Ramsey-Cass-Koopmans, and endogenous growth models.

ECON 616 Macroeconomics II
This course studies various issues in macroeconomic theory within a dynamic general equilibrium framework. Topics covered vary from year to year. However, the first part of the course is usually an initiation into useful techniques such as dynamic programming and the numerical methods. *Prerequisite:* ECON 615.

ECON 617 Advanced Macro Theory
This is an advanced course in macroeconomics designed for Ph.D. students. The course deals with the New Classical and New Keynesian macroeconomics, rational expectations, and disequilibrium approaches. Emphasis is placed on model solution techniques, optimal control theory, and stochastic processes. Recent developments in empirical estimation will also be dealt with.

Economic Development and Planning

ECON 620 Development Planning I
This course deals with the main consistency models used in development planning. Aggregate macro-models, extensions of two-gap models and multisectoral consistency models are studied in detail. On the basis of case studies, special attention is given to the building of such models, to their limitations for policy users and to their possible improvement in the case of limited statistical information.

ECON 621 Development Planning II
The main purpose of this course is the study of aggregate and disaggregate optimization models applied to development planning. The theoretical discussions are complemented with the use of these models to study different policy issues.

ECON 622 Economic Development
Modern theories of economic development are presented. Topics include microeconomic reform and transition in developing economies, income inequality and enterprise and, foreign investment and technology flows as a means to development. In addition, analytical techniques used in the study of structure and functioning of developing economies are presented.

ECON 623 Growth and Development
This course examines a series of models that are relevant to the study of economic growth and development. These issues are studied from a macroeconomic perspective. That is, emphasis is put on highly stylized models characterized by rational decision making within a dynamic environment.

ECON 624 Topics in Economic Development
Why are some countries poor and others rich? What can account for cross-country differences in fertility and mortality rates? In gender gaps, civil war, and school attainment? Why did the industrial revolution start in Europe? Why did Europe colonize the rest of the world, rather than the other way around? Why are some former colonies (US, Canada) so much richer than others (India and Zimbabwe)? This course presents research which addresses these issues. While emphasis in on theoretical research where overlapping-generations models are used to generate multiple steady-state equilibria, empirical work is also examined.

Financial Economics

ECON 642 Financial Economics I
This course is the first of a two course sequence in financial economics, and is intended to provide an introduction to contemporary theoretical and empirical modeling in financial markets. The course provides a foundation for more advanced work in financial economics while allowing students without an exceptionally strong mathematical background to become familiar with the discipline. Theoretical topics include measures of risk aversion, stochastic dominance, individual portfolio choice under uncertainty, the capital asset pricing model (CAPM), and the arbitrage pricing theory (APT). Empirical topics include tests of CAPM and the APT, the efficient markets hypothesis, performance evaluation, and event test methodology.

ECON 643 Financial Economics II
This course is the second of a two course sequence in financial economics, and is intended to provide an introduction to several advanced topics in theoretical and empirical financial economics. Theoretical topics include the valuation of state contingent securities, dynamic asset pricing, and continuous time methods. Empirical topics include the time-series properties of return, traditional structural estimation of asset pricing models of maximum-likelihood (ML) and the generalized method-of-moments (GMM), calibration and simulation,

variance bounds tests, and an introduction to empirical methods for continuous time models. *Prerequisites:* ECON 642 and one graduate level course in econometrics, or permission of the instructor.

Public Economics

ECON 656 Public Finance: Expenditure
This course deals with welfare economics and the role of the government in supplying goods. The principal topics are the optimal supply of public goods, voting mechanisms and models of preference revelation, consumer's surplus, externalities in production and consumption, optimal pricing models, the theory of clubs, inequality, cost-benefit analysis, federalism and federal-provincial relations in Canada.

ECON 657 Public Finance: Taxation
This course analyzes both the descriptive and normative effects of alternative taxation policies on economic behaviour. In the descriptive part it deals with work-leisure choice, saving decisions and the incidence of the corporation income tax. The normative part deals with the optimality issues of income and commodity taxation. Emphasis is given to both analytical and policy considerations.

ECON 658 Environmental Economics
This course deals with the interrelationship between economics and the physical environment. The objective is to depict the problem of environmental quality as an economic problem. The course focuses on the use of concepts and instruments derived from public finance for the resolution of environmental issues. Numerous case studies are discussed.

International Economics

ECON 661 International Trade
This course provides a systematic treatment of neo-classical international trade theory, including the theory of comparative advantage, the theory and practice of commercial policy, trade and welfare, and customs union theory. The course emphasizes the interaction of trade theory with policy questions.

ECON 662 International Monetary Economics
This course deals with the specific issues resulting from balance of payments and exchange rates adjustments for open economies. Topics covered in this field include monetary and fiscal policies for external and internal balance, the international transmission of disturbances and adjustments mechanisms, the current account, international capital flows, the foreign exchange markets and the international monetary system.

Industrial Economics

ECON 673 Industrial Organization
This course surveys economic models of industrial behaviour. Topics covered include theories of oligopoly, effects of potential entry, product differentiation, advertising, technological change, vertical integration, monopoly and merger issues.

ECON 674 Economics of Regulation
This course examines economic theories of regulation as applied to monopolized and competitive industries, together with their policy implications. Topics covered include natural monopoly, contestable markets, effects of "traditional" regulation (such as rate of return and Ramsey pricing), together with an examination of recent theories of optimal regulation under asymmetric information. Topics in the regulation of industries include minimum quality standards, licensing, and predatory business practices.

Labour Economics

ECON 677 Labour Economics I
This course covers selected topics in the field of labour economics. The focus of the course is on microeconomic analyses and issues. The emphasis is on the application of some of the ideas from the theories of information, uncertainty, and incentives to the understanding of labour markets and institutions. Topics covered include wage and wage differentials, discrimination, human capital, life-cycle models of labour markets, effects of asymmetric information, self-enforcing implicit contracts, efficiency wage models, principal-agent problems, team production and tournaments.

ECON 678 Labour Economics II
The main objective of this course is to examine a relatively small number of topics in modern labour economics and, ultimately, their empirical and econometric application. The topics covered include static and dynamic models of labour supply, dynamic models of job search and job matching, econometric analysis of labour market transition data, unemployment insurance, and unemployment theories. *Prerequisites:* ECON 612 and ECON 680.

Econometrics

ECON 680 Econometric Theory I
The general aim of this course is to discuss some of the fundamental methods of econometrics and their theoretical justification. The course begins with a mathematical and statistical review and moves on to a thorough discussion of the general theory of least squares (including instrumental variables) and maximum-likelihood, their justification and associated tests of significance. Applications include linear, single-equation and simultaneous equations

models, some non-linear models, and specification analysis. Students are expected to undertake various exercises, including computer-based applications.

ECON 681 Econometric Theory II
This course covers advanced topics in estimation and inference in non-linear econometric models including asymptotic theory, generalized method of moments, quasi-maximum likelihood, simulation based methods, non-parametric and semiparametric estimation, bootstrap methods and robust estimators. *Prerequisite:* ECON 680.

ECON 682 Applied Econometrics: Time-Series
This course provides an introduction to statistical techniques for analyzing time-series data. Topics include Box-Jenkins methodology, spectral analysis, forecasting, tests for unit roots, multivariate time-series analysis: vector autoregressions, causality, co-integration, and nonlinear time-series models such as ARCH models.

ECON 683 Applied Econometrics: Microeconometrics
This course provides an introduction to statistical techniques and practical aspects of microeconometric analysis. Topics include binary response models, censored and truncated regression models, analysis of categorical survey data, instrumental variables, treatment effects, panel data models with fixed and random effects, analysis of transition data, estimation by simulation, and estimation of dynamic programming models. *Prerequisite:* One successful completed graduate level course in econometrics, or permission of the instructor.

Mathematical Economics

ECON 690 Mathematical Economics

Research, Theses, and Preliminary Examinations

ECON 694 Reading Courses in Economics
With the permission of the Graduate Studies Committee a supervised reading course in a specialized area in which no course is offered by the Department.

ECON 695 Seminar in a Special Topic
Recent Special Topics have included: ECON 695C: Monetary Economics; ECON 695D: Game Theory; ECON 695E: Workshop in Advanced Economic Theory; ECON 695G: Applied Industrial Organization; ECON 695H: Empirical Trade; ECON 695J: Political Economics; ECON 695K: Natural Resources and Environmental Economics Workshop.

ECON 703 Master's Research Paper (21 credits)
ECON 805 Doctoral Comprehensive Examination (6 credits)

ECON 806 **Doctoral Research Seminar** (6 credits)
ECON 807 **Doctoral Thesis** (57 credits)

Cognate Courses

In addition, graduate students in economics may be permitted to register for a limited number of courses offered in the M.Sc. program in the John Molson School of Business. In all such cases, prior permission of the Department of Economics and the John Molson School of Business is required.

Diploma in Economics

Admission Requirements. To be considered for admission, applicants must hold an undergraduate degree with a cumulative GPA of 3.50 or the equivalent. In addition, they must have earned sufficient credits in economics and basic statistical and mathematical methods to cope with graduate level courses in economics. In exceptional cases, and at the discretion of the Graduate Program Director, an applicant who has not yet satisfied this Arts and Science prerequisite may be admitted, providing that the missing courses are included in the student's program in addition to the normal course requirements for the diploma. The grading scheme for diploma courses will be the scheme applicable to graduate courses (i.e., the passing grade is B-).

TOEFL Requirement. The Department of Economics recommends students for admission with a TOEFL score of at least 580 (or 237 for computer-based total). A score of 5.0 or above in the essay section (TWE) is also required.

Application Deadlines. The deadline for completed applications is May 1 for the Fall term and October 1 for the Winter term.

Requirements for the Diploma

1. **Credits.** Candidates are required to complete a minimum of 30 credits. No more than 12 credits can be earned as pro-tanto credit for previous work.

2. **Courses.** Credit courses for the diploma program are listed below. Up to 6 credits may be earned in the category of cognate courses (see Class C). Each student's program of study must be approved by the Graduate Program Director.

Academic Regulations

1. **GPA Requirement.** Students having completed at least four courses are assessed at the end of each academic year based on creditable courses completed after their first registration in the program. To be permitted to

continue, students must have obtained a cumulative grade point average of at least 2.70.

2. **C Rule.** Normally a student receiving a grade of C in two courses will be required to withdraw from the program. Students withdrawing for this reason may petition the Diploma Committee for special consideration. In cases of extenuating circumstances probationary continuation in the program will be considered.

3. **F Rule.** Students who receive a failing grade in the course of their studies will be withdrawn from the program. Students may apply for readmission. Students who receive another failing grade after re-admission will be withdrawn from the program.

4. **Time Limit.** All work for a diploma program must be completed within 6 terms (2 years) from the time of initial registration in the program for full-time students; for part-time students the time limit is 12 terms (4 years).

5. **Graduation Requirement.** To graduate, students must have completed all course requirements with a cumulative grade point average of at least 2.70.

Courses

ECON 501 and 503 are compulsory core courses for all students. A minimum of six credits must be taken from Class B. The remaining credits may be selected from Class A and/or Class B and/or Class C with no more than six credits taken from Class C.

Class A Courses (3 credits each)
The 500 level courses have a 3 credit value and are cross-listed with the undergraduate 400 level courses.

ECON 501 Advanced Microeconomic Theory
ECON 503 Advanced Macroeconomic Theory
ECON 509 History of Economic Thought I
ECON 510 History of Economic Thought II
ECON 513 Economic Growth and Fluctuations
ECON 514 Economic Development: Policy Analysis
ECON 521 Econometrics I
ECON 522 Econometrics II
ECON 523 Applied Econometrics
ECON 525 Mathematics for Advanced Study in Economics
ECON 532 Advanced Monetary Theory
ECON 533 Financial Economics
ECON 536 Economics of Taxation
ECON 537 Economics of Public Expenditure

ECON 542 **International Economics: Trade Theory**
ECON 543 **International Economics: Finance**
ECON 561 **Industrial Organization**
ECON 562 **The Corporate Economy**
ECON 563 **Economics of Regulation**
ECON 564 **Game Theory, Information, and Economic Modelling**
ECON 565 **The Economics of Professional Sport**
ECON 581 **Advanced Labour Economics I**
ECON 582 **Economics of Personnel and Industrial Relations**
ECON 583 **Advanced Labour Economics II**
ECON 591 **Advanced Environmental Economics**
ECON 593 **Regional Economics**
ECON 595 **Economics of Transportation and Communications**
ECON 597 **Income Distribution and Economic Inequality**
ECON 598 **Advanced Topics in Economics**
ECON 599 **Advanced Topics in Economics**

Class B Courses (3 credits each)
All 600 level courses offered in the Department of Economics.

Class C Courses (3 credits each)
All master level courses in the John Molson School of Business.

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Education

Faculty

Professor Emeriti: H. Entwistle, Patsy Lightbown; ***Professors:*** Philip C. Abrami, Joyce Barakett, Lois Baron, Robert M. Bernard, Gary Boyd, Dennis J. Dicks *(Graduate Program Director— Programs in Educational Technology)*, Nina Howe, Ellen Jacobs *(Chair)*, William Knitter *(Graduate Program Director—M.A. Program in Educational Studies, Diploma in Adult Education)*, Richard F. Schmid, Sandra Weber; ***Associate Professors*:** Paul Bouchard, Ailie Cleghorn, Miranda D'Amico, Elizabeth Gatbonton, Arpi Hamalian, Joanne Locke, Helena Osana *(Graduate Program Director—M.A. Program in Child Study)*, Steve Shaw, Joanna White; ***Assistant Professors***: Walcir Cardoso, Saul Carliner, Laura Collins *(Graduate Program Director—M.A. Program in Applied Linguistics)*, Bryn Holmes, Marlise Horst, Emery Hyslop-Margison, Harriet Petrakos, Ayaz Naseem, Johannes Stroebel, Pavel Trofimovitch; ***Lecturers:*** Anne Hetherington, Sara Weinberg; ***Adjunct Professors:*** Bette Chambers, Sylvia D'Apollonia, H. Dedic, S. Rosenfield.

Programs

The Department of Education offers the following graduate programs: Doctor of/Doctorate in Philosophy (Educational Technology), Master of/Magisteriate in Arts (Applied Linguistics), Master of/Magisteriate in Arts (Child Study), Master of/Magisteriate in Arts (Educational Studies), Master of/Magisteriate in Arts (Educational Technology), Diploma in Adult Education, Diploma in Instructional Technology, and a Graduate Certificate in Teaching English as a Second Language.

Tel.: 848-2424 ext. 2030; Fax: 848-4520

Doctor of/Doctorate in Philosophy (Educational Technology)

The Ph.D. in Educational Technology is designed to provide opportunities for advanced study both in the theoretical foundations of educational technology and in the application of such knowledge to practice. Research in the program falls into five main categories: 1. human performance technology; 2. human resources development; 3. educational cybernetics; systems analysis and design; 4. media research and development; and 5. distance education. In this 90-credit program there are four core courses and six tutorials that focus on the student's research interests. Students take an oral and written comprehensive examination, then prepare a dissertation proposal and a dissertation. A final oral defence of the dissertation is required for completion of the degree.

Admission Requirements. The normal requirement for admission is a Master of Arts degree in educational technology, with high standing, from a recognized university. Applicants with a master's degree (or equivalent) in a related field, such as educational psychology, educational planning, computer applications, and curriculum and instruction will also be considered. Students lacking the necessary background in educational technology may be required to take prerequisite courses. In particular, the following courses (or their equivalents) are prerequisites to the doctoral program: ETEC 613, 648, 712 (Total: 15 credits).

Application Deadlines. Applications should be received by February 1 for the Fall session, and September 15 for the Winter session. Late applications may be considered if space is available. Applicants should apply online at: http://welcome.concordia.ca/. International students will only be considered for September admission. For students applying for university awards, the deadline for application is December 15.

Requirements for the Degree

1. **Credits.** A fully-qualified candidate is required to complete a minimum of 90 credits.

2. **Residence.** The minimum period of residence is two years (6 terms) of full-time study beyond the master's degree, or the equivalent in part-time study. (A minimum of one year of full-time study is highly recommended).

3. **Orientation.** Each candidate will be assigned a research supervisor and a supervisory committee. The supervisory committee will consist of three members of the faculty, including the research supervisor. This supervisory committee will advise the student as to which courses should be taken, including prerequisite courses where necessary (to be determined no later than the first two weeks of the student's first term), and will arrange for the comprehensive examination. At this time the constitution of the student's advisory committee may change.

4. **Courses.** Each candidate is required to complete the following:
   a. ETEC 800 and 801: Educational Technology Research Seminar I and II, respectively (3 credits each). Students will register for ETEC 800 in their first year and for ETEC 801 in their second year. In succeeding years all candidates will be expected to attend and participate in these seminars on a non-credit basis.
   b. ETEC 802: Advanced Research Design and Quantitative Methods in Educational Technology (3 credits).
   c. ETEC 805: Research Reports (3 credits).
   d. 18 credits of elective courses from the research areas of instructional design, human resources development, educational cybernetics, systems analysis and design; theory, development and research in educational

media; and distance education are chosen in consultation with the supervisory committee.

e. ETEC 890: Doctoral Proposal (6 credits).
(**Note**: The proposal may be accepted only after admission to candidacy).

5. **Comprehensive Examination.** Each candidate must successfully complete ETEC 891: Doctoral Comprehensive Examination (9 credits), before being admitted to candidacy. The comprehensive consists of a written and oral examination in three areas: general foundations of Educational Technology, and two of the research areas. After successfully completing the comprehensive examination, the student is "admitted to candidacy" for the degree.

6. **Thesis.** A doctoral thesis is expected to make an original contribution to knowledge, and be presented in acceptable literary form. For purposes of registration, this work will be designated as ETEC 895: Doctoral Research and Thesis (45 credits).

Academic Regulations

1. **GPA Requirements.** The academic progress of students is monitored on a periodic basis. To be permitted to continue in the program, students must obtain a cumulative grade point average (GPA) of 3.00 based on a minimum of 12 credits. Students whose GPA falls below 3.00 are considered to be on academic probation during the following review period. Students whose GPA falls below 3.00 for two consecutive review periods are withdrawn from the program.

2. **C Rule.** If a student receives a *C* grade (either in a prerequisite or regular course) in the Ph.D. program, then the case will be reviewed by the Educational Technology Faculty Committee, which will decide whether the student shall be permitted to continue in the doctoral program. To be allowed to continue in the program, the student must either (a) repeat the course that was granted the *C*, and receive an *A* or *B* grade, or (b) register for an acceptable substitute and receive an *A* or *B* grade.

3. **F Rule.** Students who receive a failing grade in the course of their Ph.D. studies will be withdrawn from the program. Students may apply for readmission. Students who receive another failing grade after re-admission will be withdrawn from the program.

4. **Time Limit.** All work for a doctoral degree must be completed within 18 terms (6 years) of full-time study or 24 terms (8 years) of part-time study from the time of initial registration in the program.

5. **Graduation Requirement.** In order to graduate, students must have a cumulative GPA of at least 3.00.

Courses

Doctoral courses offered by the Department of Education fall into the following categories:

ETEC 800-809 Research Methods and Practice
ETEC 810-819 Human Performance Technology
ETEC 820-829 Human Resources Development
ETEC 830-839 Educational Cybernetics, Systems Analysis and Design
ETEC 840-849 Theory, Development and Research in Educational Media
ETEC 850-859 Distance Education
ETEC 890-899 Research Proposal, Comprehensive Examination and Thesis Research

Required Courses

ETEC 800 **Educational Technology Research Seminar I** (Year 1)
ETEC 801 **Educational Technology Research Seminar II** (Year 2)
ETEC 802 **Advanced Research Design and Quantitative Methods in Educational Technology**
ETEC 805 **Research Reports**
ETEC 890 **Doctoral Research Proposal** (6 credits)
ETEC 891 **Doctoral Comprehensive Examination** (9 credits)
ETEC 895 **Doctoral Research and Thesis** (45 credits)

Area Tutorials

The content and format of an area tutorial may vary from year to year, depending on the number of students and the availability of faculty members. All area tutorials involve directed reading, research, seminar presentations, and discussion sessions on selected topics within that problem area.

ETEC 810-815 Area Tutorials in Human Performance Technology I-VI
Topics will be chosen from the following list: 1. problems in organization and representation of knowledge; 2. problems in cognition, mental modeling and learning; 3. memory systems and instructional design; 4. sequencing of language instruction; 5. design of self-instructional systems; 6. tutorial-dialogue analysis; 7. prose processing; 8. small group learning processes and techniques.

ETEC 820-825 Area Tutorials in Human Resources Development I-VI
Topics will be chosen from the following list: 1. program development in corporate and industrial training; 2. models for occupational skills training; 3. affirmative action training programs; 4. learning variables and problem solving in adults; 5. learner motivation.

ETEC 830-835 Area Tutorials in Educational Cybernetics, Systems Analysis and Design I-VI

Topics will be chosen from the following list: 1. computer simulation of instructional systems; 2. graph-theoretic models of curriculum and instruction; 3. meta-scientific foundations of cybernetics; 4. organizational cybernetics.

ETEC 840-845 Area Tutorials in Theory, Development and Research in Educational Media I-VI

Topics will be chosen from the following list: 1. educational message design; 2. comparative effectiveness of media production variables including computer based multi-media learning systems; 3. factors related to visual literacy; 4. media design for traditional cultures.

ETEC 850-855 Area Tutorials in Distance Education I-VI

Topics will be chosen from the following list: 1. systems analysis and planning of self-instructional facilities and procedures; 2. study of tele-communications futures and implications for education; 3. computer-video hybrid systems; 4. investigation and simulation of human contact in tele-education; 5. learning styles and preferred learning activities; 6. the information society; 7. distance education in the Third World.

Master of/Magisteriate in Arts (Educational Technology)

Program Objectives

The master's program in Educational Technology is designed to prepare a new breed of educator - one who can identify educational problems, and can apply new developments in psychology, in techniques of communication, in management theory or in systems analysis to solve them. The program prepares people for work in educational institutions, industrial and government training systems as consultants, producers and evaluators of educational media, designers of instructional materials and systems, managers of learning resources educational planners, and knowledge engineers (who collect human expertise and incorporate it into machines). Students in this 60-credit program may choose one of two patterns: the thesis/thesis-equivalent option or the non-thesis option (field-oriented internship). Both patterns consist of a core of required courses and a set of elective courses.

Students in both patterns prepare a proposal and a culminating document (thesis/thesis-equivalent or internship report). Thesis/thesis-equivalent students engage in a public defence of their work, while internship students give a public presentation based on their report.

Master of/Magisteriate in Arts with Thesis (Option A)

This option is divided into two areas: Area I (Research in and Development of Educational Technology) and Area II (Production and Evaluation of Educational Materials).

Admission Requirements. Entry into the program is based on the individual backgrounds of applicants, who should possess a bachelor's/baccalaureate degree with at least a major or the equivalent in any subject. An average of at least a *B* in the major or equivalent is required. Students from the Diploma in Instructional Technology (who have not graduated from the Diploma) may apply for admission with advanced standing. A maximum of 18 credits may be transferred. However, no financial credit will be given.

Application Deadlines. Applications should be received no later than February 1 for the Fall session, and September 15 for the Winter session. Detailed descriptions of the program may be obtained from the Department. Applicants should apply online at: http://welcome.concordia.ca/. International students will only be considered for September admission. Students who are applying for university awards must apply by December 15.

Requirements for the Degree

1. **Credits.** A fully qualified candidate is required to complete a minimum of 60 credits.

2. **Residence.** The minimum residence requirement is two years (6 terms) of full-time study, or the equivalent in part-time study.

3. **Language Requirement.** Students who are residents of Quebec will be required to demonstrate that they possess a good working knowledge of spoken French (i.e., the equivalent of French 211). Students who have completed High School in Quebec will have this requirement waived (once proof is shown).

4. **Courses.** The individual course of study is decided in consultation with the student's academic advisor, although certain courses are required of all students.

   a. **Core Courses.** ETEC 613 (3 credits), ETEC 648 (6 credits) and ETEC 712 (6 credits).
   b. **Elective Courses.** 24 credits chosen from the list of courses which follows on page 158, in consultation with the advisor.
   c. **Internship.** ETEC 790 (3 credits). This course normally consists of a supervised internship activity (minimum of 135 hours) in the University or in the field. An internship may consist of course or program analysis, materials design and/or production, systems analysis and design, or

participation in research projects, or be a project typically conducted in industry, schools, or government organizations.

5. **Thesis (Area I).** Students will register for ETEC 795 (3 credits) and ETEC 796 (15 credits), comprising a written thesis proposal, a thesis and an oral defence. For purposes of registration, this work will be designated as ETEC 796 (15 credits).

6. **Thesis-Equivalent (Area II).** Students will register for ETEC 795 (3 credits) and ETEC 796 (15 credits), comprising a written thesis-equivalent proposal, a thesis-equivalent and an oral defence. Students are required to produce educational materials to achieve specific objectives (e.g., an educational television production or a computer-based instructional program) and their evaluation.

Academic Regulations

1. **GPA Requirement.** The academic progress of students is monitored on a periodic basis. To be permitted to continue in the program, students must obtain a cumulative grade point average (GPA) of 3.00 based on a minimum of 12 credits. Students whose GPA falls below 3.00 are considered to be on academic probation during the following review period. Students whose GPA falls below 3.00 for two consecutive review periods are withdrawn from the program.

2. **C Rule.** If one *C* grade is received it may count toward the required or optional courses in the program. If a student receives a second *C* grade, the case will be reviewed by the Educational Technology Faculty Committee, which will decide whether the student shall be permitted to continue in the program. If a student is allowed to continue, one *C* grade may count toward graduation. For additional *C* grades, the student must either repeat a course that was granted a *C* and receive either an *A* or *B* grade, or must register for an acceptable substitute and receive an *A* or *B* grade.

3. **F Rule.** Students who receive a failing grade in the course of their studies will be withdrawn from the program. Students may apply for readmission. Students who receive another failing grade after re-admission will be withdrawn from the program.

4. **Time Limit.** All work for a master's/magisteriate degree for full-time students must be completed within 12 terms (4 years) from the time of initial registration in the program at Concordia University; for part-time students the time limit is 15 terms (5 years).

5. **Graduation Requirement.** In order to graduate, students must have a cumulative GPA of at least 3.00.

Master of/Magisteriate in Arts without Thesis (Option B)

Admission Requirements. Entry into this program is based on the individual backgrounds of applicants, who should possess a bachelor's/baccalaureate degree with at least a major or the equivalent in any subject. An average of at least a *B* in the major or equivalent is required. Students from the Diploma in Instructional Technology (who have not graduated from the Diploma) may apply for admission with advanced standing. A maximum of 18 credits may be transferred. However, no financial credit will be given.

Application Deadlines. Applications should be received no later than February 1 for the Fall session, and September 15 for the Winter session. Detailed descriptions of the program may be obtained from the Department. Applicants should apply online at: http://welcome.concordia.ca/. International students may only apply for September admission. Students who are applying for University awards must apply by December 15.

Requirements for the Degree

1. **Credits.** A fully qualified candidate is required to complete a minimum of 60 credits.

2. **Residence.** The minimum residence requirement is two years (6 terms) of full-time study, or the equivalent in part-time study.

3. **Language Requirement.** Students who are residents of Quebec will be required to demonstrate that they possess a good working knowledge of spoken French (i.e., the equivalent of French 211). Students who have completed high school in Quebec will have this requirement waived (once proof is shown).

4. **Courses.** The individual course of study is decided in consultation with the student's academic advisor, although certain courses are required of all students.
   a. **Core Courses.** ETEC 613 (3 credits), ETEC 648 (6 credits) and ETEC 712 (6 credits).
   b. **Elective Courses.** 24 credits to be chosen from the list of courses on page 158, in consultation with the advisor.

5. **Internship II.** ETEC 791 (15 credits). ETEC 791 normally consists of an extensive activity (minimum 675 hours) in the university or in the field. The experience will vary with the interests of the student and the opportunities available. The objectives are: to apply skills acquired in program courses; to obtain more "real world" experience with the actual practice of educational technology; and to undertake a synthesizing process which combines the subjects studied separately within the program in a single undertaking.

6. **Internship Report.** ETEC 792 (6 credits). The internship report will address both the scholarly/academic and professional practice aspects of Educational Technology. Typically 10,000 or more words in length, the report should contain at least two parts: 1. A detailed description of the Internship II activities, utilizing a case study format; including relevant literature review, calling upon the research as it related to the activities involved. 2. A conclusions and recommendations section which outlines what was learned, what one would do differently, and what potentially generalizable principles one might recommend to fellow educational technologists encountering similar circumstances. If the internship is completed in part or full outside the program, a letter from the student's "external" supervisor acknowledging and/or commenting on the report will be required. The student completes the internship by disseminating the experiences detailed in the report in a public presentation.

Academic Regulations

1. **GPA Requirement.** The academic progress of students is monitored on a periodic basis. To be permitted to continue in the program, students must obtain a cumulative grade point average (GPA) of 3.00 based on a minimum of 12 credits. Students whose GPA falls below 3.00 are considered to be on academic probation during the following review period. Students whose GPA falls below 3.00 for two consecutive review periods are withdrawn from the program.

2. **C Rule.** If one *C* grade is received it may count toward the required or optional courses in the program. If a student receives a second *C* grade, the case will be reviewed by the Educational Technology Faculty Committee, which will decide whether the student shall be permitted to continue in the program. If a student is allowed to continue, one *C* grade may count toward graduation. For additional *C* grades, the student must either repeat a course that was granted a *C* and receive either an *A* or *B* grade, or must register for an acceptable substitute and receive an *A* or *B* grade.

3. **F Rule.** Students who receive a failing grade in the course of their studies will be withdrawn from the program. Students may apply for readmission. Students who receive another failing grade after re-admission will be withdrawn from the program.

4. **Time Limit.** All work for a master's/magisteriate degree for full-time students must be completed within 12 terms (4 years) from the time of initial registration in the program at Concordia University; for part-time students the time limit is 15 terms (5 years).

5. **Graduation Requirement.** In order to graduate, students must have a cumulative GPA of at least 3.00.

Course Themes (for Options A and B)

The M.A. program in Educational Technology offers four course themes to aid students in focusing their elective course of study. Each theme has a set of recommended courses and is designed to help students develop skill and knowledge in the appropriate areas. Students may choose to follow all or part of these themes. Since not all courses will be offered every year, course planning should be done carefully and with the aid of a faculty advisor. Please see the program publications for detailed course patterns.

Computer-Aided Learning. Computers have the potential to improve education and training. This concentration in educational computing provides background in learning and instructional theories relevant to the design of effective computer-aided learning materials. Practical skills are emphasized, including methods of using computers to coordinate multi-media tutoring systems, and methods of using computers to solve problems confronting administrators, teachers, researchers and students. Additional topics of study include knowledge representation and artificial intelligence.

Educational Media. Media have become increasingly important in education and training, especially in the computer-based and visual domains. In order for educational technologists to develop and implement instruction involving media, they must first acquire the theoretical knowledge and practical skills necessary to supervise the production of media-based content. The media concentration offers familiarization in print-based systems, interactive video, and multi-media computer-assisted learning, sound, photography and television.

Distance Education. The concentration on distance education builds upon the M.A. Program's strengths in human performance technology, audio visual media production, computer- assisted learning and research. The courses in this pattern address specific issues in distance education related to analysis of various DE design models, materials production and delivery, student support, administration of educational technology units and evaluation. The concentration is intended for both practitioners of distance education and those interested in pursuing a career in an internationally, rapidly growing area of education.

Human Performance Technology. By following the training concentration, a student can acquire the basis for sound practice in human resource development. Developing human resources is an increasingly important function in corporate, industrial, government and educational settings. This can entail a broad spectrum of knowledge and skills: long-term planning based on needs analysis; designing instructional systems; designing, producing and evaluating training programs in a variety of media; and managing human resource operations in a manner consistent with strategic goals.

Courses

The master's level courses offered in educational technology fall into the following categories:

ETEC 600-609 Philosophical and Theoretical Foundations of Educational Technology
ETEC 610-619 Psychological Aspects of Educational Technology
ETEC 620-629 Studies in Communication Theory
ETEC 630-639 Studies in the Development and Evaluation of Curriculum and Educational Materials
ETEC 640-649 Studies in Research Methodology for Educational Technology
ETEC 650-659 Problems in Educational Systems Analysis and Planning
ETEC 660-669 Studies in Educational Computing
ETEC 670-679 Problems in Educational Innovation
ETEC 680-689 Laboratories in Educational Television, Film and Audio Production
ETEC 691-699 Research Topics in Educational Technology
ETEC 700-709 Studies in the Management of Learning Resources
ETEC 710-719 Studies in Human Performance Technology
ETEC 790-799 Thesis and Internship in Educational Technology

Core Courses

ETEC 613 Learning Theories (3 credits)
This course examines the processes of specifying and producing environmental conditions for observing and promoting changes in the student. Its focus is the study of the learning process (including the learner). The student will be expected to develop a general understanding of the major theoretical and practical approaches to the study of learning and to begin to develop competence in selected aspects of the area.

ETEC 648 Fundamental Methods of Inquiry for Educational Technology (6 credits)
This course provides an introduction to the philosophy of inquiry and to the main methodologies of inquiry which are particularly appropriate to educational technology and provide guidance in the communication of results of research, and reflective practice. The course also provides laboratory work with appropriate computer software for each methodology.
Note: Students who have received credit for ETEC 544/644 and ETEC 545/645 may not take this course for credit.

ETEC 712 Human Performance Technology (6 credits)
Human performance technology combines knowledge from several areas of practice (needs assessment, task analysis, instructional design, media selection, organizational design) to permit appropriate responses to performance

problems on the job. The course will entail a wide range of readings and activities--lectures, class studies, workshops and projects.
Note: Students who have received credit for ETEC 510/710 and ETEC 511/711 may not take this course for credit.

Elective Courses

The department currently offers the courses listed below. Each course is worth 3 credits unless otherwise indicated. The pattern of courses offered may vary from year to year. Detailed information on the courses offered in a given year is available from the department.

ETEC 604 **Fundamentals of Educational Technology**
ETEC 606 **Educational Cybernetics**
Prerequisite: Must have completed 12 Educational Technology graduate credits.
ETEC 607 **Philosophical Aspects of Educational Technology**
Prerequisite: Must have completed 12 Educational Technology graduate credits.
ETEC 614 **Human Communication**
ETEC 616 **Topics in Learning Theories**
Prerequisites. ETEC 513/613
ETEC 635 **Principles of Educational Message Design**
ETEC 636 **Formative Evaluation of Educational Materials**
Prerequisite: ETEC 512/712 (6 credits)
ETEC 637 **Educational Simulation and Gaming**
Prerequisites: ETEC 513/613, and ETEC 512/712 (6 credits)
ETEC 646 **Introduction to Qualitative and Case Study Research**
Prerequisite: ETEC 548/648 (6 credits)
ETEC 649 **Topics in Methods of Inquiry** (3 credits)
Prerequisite: ETEC 548/648 (6 credits)
ETEC 653 **Educational Systems Analysis**
Prerequisite: ETEC 548/648 (6 credits)
ETEC 655 **Educational Technology in Developing Nations**
ETEC 660 **Introduction to Educational Computing**
Prerequisite: Computer Literacy course or equivalent
ETEC 662 **Computer Based Systems in Education and Training**
Prerequisite: ETEC 560/660
ETEC 664 **Computer Assisted Instruction**
Prerequisites: ETEC 513/613 and ETEC 560/660 (6 credits)
ETEC 666 **Modelling and Simulation**
ETEC 667 **Knowledge Engineering and Intelligent Tutoring Systems**
Prerequisite: ETEC 513/613
ETEC 668 **Design, Development and Production of Computer-Based Multimedia** (6 credits)

Prerequisites: ETEC 560/660, ETEC 513/613, and ETEC 512/712 (6 credits)

ETEC 676 **Human Resources Planning and Policy**

ETEC 680 **Planning and Producing Audio-Visual Programs** (6 credits)
Prerequisites: ETEC 513/613, and 512/712 (6 credits)

ETEC 682 **Laboratory in Studio Television Production and Evaluation for Education I**

ETEC 691 **Advanced Readings and Research in Educ. Technology I**

ETEC 692 **Advanced Readings and Research in Educ. Technology II**

ETEC 693 **Special Issues in Educational Technology**

ETEC 695 **Topics in Educational Informatics I**

ETEC 701 **Administration of Educational Technology Units for Education and Training Systems**

ETEC 702 **Fundamentals of Distance Education**

ETEC 703 **Design, Preparation and Evaluation of Mixed Media Courseware for Distance Education**
Prerequisites: ETEC 513/613, and 512/712 (6 credits)
Note: Students who received credit for ETEC 594 may not take this course for credit.

ETEC 705 **Designing and Developing Print-Based Instruction**
Prerequisites: ETEC 513/613; ETEC 512/712 (6 credits)

ETEC 710 **Instructional Design I**
Note: This course was last offered in 1996-97

ETEC 711 **Instructional Design II**
Note: This course was last offered in 1997-98

ETEC 715 **Topics in Human Performance Technology** (3 credits)
Prerequisite: ETEC 512/712 (6 credits)

ETEC 790 **Internship I (Thesis Option)** (3 credits)

ETEC 791 **Internship II (Non-Thesis Option)** (15 credits)

ETEC 792 **Internship Report (Non-Thesis Option)** (6 credits)

ETEC 795 **Thesis Proposal** (3 credits)

ETEC 796 **Thesis or Thesis-Equivalent** (15 credits)
Prerequisite: ETEC 795

Cognate Courses

Graduate students in educational technology may be permitted to register for up to two elective courses offered in other graduate programs. In all such cases, prior permission of the Graduate Program Director is required.

Diploma in Instructional Technology

The diploma program in Instructional Technology provides professional training in the theory, methods and techniques of educational technology. It is designed to provide teachers, corporate and industrial trainers, media consultants and others who are concerned with media selection, audiovisual

production, computer-based instruction, the effectiveness of instruction, self-instructional systems, and information exchange, an opportunity to acquire competence in the theory and applications of instructional technology. The Ministry of Education has officially recognized this diploma for purposes of teacher classification for persons who already possess a Quebec Teacher's Certificate and a first undergraduate degree. Graduates who have been awarded the Diploma in Instructional Technology meet the requirements for an Attestation awarded by the Department of Education of Quebec. (Diploma students may apply for admission to the master's program. If accepted, they may be admitted with advanced standing (to a maximum of 18 credits) using applicable courses which have not been applied to a degree).

Admission Requirements. Entry into the program is based on the individual backgrounds of applicants, who must possess a bachelor's degree with at least a major or the equivalent in any subject. The possession of a Quebec Teacher's Certificate will be an additional prerequisite for those who wish to work in the Quebec school system. The program is open to full-time and part-time students without preference.

Application Deadlines. Applications should be received no later than February 15 for Fall session, and September 15 for the Winter session. Detailed descriptions of the program may be obtained from the Department of Education, Concordia University, 1455 de Maisonneuve Blvd. West, Montreal, Quebec H3G 1M8. Applicants should apply online at: http://welcome.concordia.ca/. International Students may only apply for September session.

Requirements for the Diploma

1. **Credits.** A fully-qualified candidate is required to complete a minimum of 30 credits.

2. The course requirements will generally be completed in one year, including a summer term, or the equivalent.

3. **Courses.** All candidates are required to take ETEC 504, 512 (6 credits), 513 and 591 for a total of 15 credits, plus a minimum of 15 credits selected from the elective courses.

4. Research papers, essays, examinations or preparation of audio-visual materials may be required as part of the work for individual courses.

Academic Regulations

1. **GPA Requirement.** Graduate Diploma students must maintain a minimum GPA of 2.70 during their program of study in order to be considered a student in good standing.

2. **C Rule.** Normally a student receiving a grade of C in two courses will be required to withdraw from the program. Students withdrawing for this reason may petition the Diploma Committee for special consideration. In cases of extenuating circumstances probationary continuation in the program will be considered.

3. **F Rule.** Students who receive a failing grade in the course of their studies will be withdrawn from the program. Students may apply for readmission. Students who receive another failing grade after re-admission will be withdrawn from the program.

4. **Time Limit.** All work for a Diploma, for full-time students must be completed within 6 terms (2 years) from the time of initial registration in the program at Concordia University; for part-time students, the time limit is 12 terms (4 years).

5. **Graduation Requirement.** To graduate, students must have completed all course requirements with a cumulative GPA of at least 2.70.

Courses

A number of courses selected from the following list will be offered in either summer, fall or winter terms.

Required Courses

ETEC 504 Fundamentals of Educational Technology (3 credits)
Theory and research in instructional communications; mediational factors in the teaching-learning process; factors influencing selection of instructional means and equipment; psychological factors related to learning domains (cognitive, affective and psycho-motor).

ETEC 512 Human Performance Technology (6 credits)
Human performance technology combines knowledge from several areas of practice (needs assessment, task analysis, instructional design, media selection, organizational design) to permit appropriate responses to performance problems on the job. The course will entail a wide range of readings and activities—lectures, class studies, workshops and projects.
Note: Students who have received credit for ETEC 510/710 and ETEC 511/711 may not take this course for credit.

ETEC 513 Learning Theories (3 credits)
This course examines the processes of specifying and producing environmental conditions for observing or promoting changes in the student. Its focus is the study of the learning process (including the learner). The student will be expected to develop a general understanding of the major theoretical and

practical approaches to the study of learning and to begin to develop competence in selected aspects of the area.

ETEC 591 Administration of Educational Technology Units for Educational and Training Systems (3 credits)
Study of principles and techniques required in administering a complete educational or training sub-system within a larger operational system; learning goals; definition and validation of outcomes; choice of learning strategies and media evaluation.

Elective Courses

ETEC 503 Design, Preparation and Evaluation of Mixed Media Courseware for Distance Education
Prerequisites: ETEC 513/613, and 512/712 (6 credits)

ETEC 505 Developing and Designing Print-Based Instruction
Prerequisites: ETEC 513/613, and 512/712 (6 credits)

ETEC 506 Educational Cybernetics
Prerequisite: Must have completed 12 Educational Technology graduate credits.

ETEC 515 Topics in Human Performance Technology
Prerequisite: ETEC 512/712 (6 credits)

ETEC 516 Topics in Learning Theories
Prerequisite: ETEC 513/613

ETEC 521 Media and the Young Child

ETEC 535 Principles of Educational Message Design

ETEC 536 Formative Evaluation of Educational Materials
Prerequisite: ETEC 512/712 (6 credits)

ETEC 537 Educational Simulation and Gaming
Prerequisite: ETEC 513/613, and 512/712 (6 credits)

ETEC 546 Introduction to Qualitative and Case Study Research
Prerequisite: ETEC 548/648 (6 credits)

ETEC 548 Fundamental Methods of Inquiry for Educational Technology (6 credits)
Note: Students who have received credit for ETEC 544/644 and ETEC 545/645 may not take this course for credit.

ETEC 549 Topics in Methods of Inquiry
Prerequisite: ETEC 548/648 (6 credits)

ETEC 560 Introduction to Educational Computing
Prerequisite: Computer literacy or equivalent

ETEC 562 Computer Based Systems in Education and Training
Prerequisite: ETEC 560/660

ETEC 563 Small Computer Systems and Software for Teachers and Trainers

ETEC 564 Computer-Assisted Instruction
Prerequisites: ETEC 513/613 and 560/660 (6 credits)

ETEC 566 Modelling and Simulation

ETEC 567 **Knowledge Engineering and Intelligent Tutoring Systems**
Prerequisites: ETEC 513/613

ETEC 568 **Design, Development and Production of Computer-Based Multimedia** (6 credits)
Prerequisites: ETEC 560/660, ETEC 513/613 and ETEC 512/712 (6 credits)

ETEC 571 **Media and the Adult Learner**

ETEC 572 **Studies in Instructional Technology for Adult Learners**

ETEC 580 **Planning and Producing Audio-Visual Programs** (6 credits)
Prerequisites: ETEC 513/613, and 512/712 (6 credits)

ETEC 582 **Laboratory in Studio Television Production and Evaluation or Education I**

ETEC 592 **Fundamentals of Distance Education**

ETEC 595 **Topics in Educational Informatics I**

Tel.: 848-2424 ext. 2034

Educational Studies

Master of/Magisteriate in Arts (Educational Studies)

Program Objectives

The master's program in Educational Studies reflects the multi-disciplinary nature and evolution of education as an academic, intellectual, and professional field of study. The program therefore approaches broad issues in education as they connect with the domains of adult education, anthropology, history, philosophy, political education, psychology and sociology. The emphasis is on the application of fundamental and theoretical concerns to practical issues and problems in education.

Faculty Research Interests

Research areas in educational studies include: education of immigrants and minorities; sociology of education, and issues of difference in the classroom, political education; philosophy and history of education; women and development; curricular debate; various aspects of adult learning and professional development; literacy and education; and education in developing countries.

Admission Requirements. For entry into the program, a first degree with a minimum GPA of 3.00 (*B* average) is required with an appropriate concentration in a field of study relevant to Educational Studies. The applicant should also have a minimum of two years professional activity in education or an undergraduate record which includes at least three courses in education, each with a grade of *B* or better. Qualified applicants who fail to meet the criteria outlined may be required to take up to 12 undergraduate credits in addition to the regular graduate program, or, as appropriate, a qualifying program. (See page 28, Qualifying Students).

Application Deadlines. Detailed descriptions of the program may be obtained from the Department of Education. Applications are accepted for September, January or June admission. Applicants should apply online at: http://welcome.concordia.ca/. The deadline is February 1 for Fall and Summer sessions, September 15 for the Winter session.

Requirements for the Degree

1. **Credits.** A fully-qualified candidate must complete a minimum of 45 credits.

2. **Residence.** The minimum residence requirement is one year (3 terms) of full-time study, or the equivalent in part-time study.

3. **Language Requirement.** For students whose first language is not English or French, a test of English language proficiency is required. To fulfill this requirement you must provide one of the following: 1) TOEFL score of 600+ (or 250+ if computer based) with a writing score of 5.0+; or, 2) an IELTS score of 7 or higher; or, 3) proof that you have achieved the level of Concordia's English 212 course (testing is available through Concordia's English Department). Please contact the department for further details.

4. **Courses.** These vary according to the thesis and non-thesis options (see below).

   The degree requirements (45 credits) can be met by the successful completion either of course work and a thesis in an approved area, or of more extended course work and ESTU 692: Directed Study. The choice of a thesis or non-thesis option will normally be determined at an early stage in the student's program. A tentative detailed outline of the proposed research topic must be submitted with the application for admission to the program. A student who completes a thesis or a directed study will normally be required to defend it in an oral examination. Proposed research topics in both options must be approved by the graduate Educational Studies Committee.

Academic Regulations

1. **GPA Requirement.** The academic progress of students is monitored on a periodic basis. To be permitted to continue in the program, students must obtain a cumulative grade point average (GPA) of 3.00 based on a minimum of 12 credits. Students whose GPA falls below 3.00 are considered to be on academic probation during the following review period. Students whose GPA falls below 3.00 for two consecutive review periods are withdrawn from the program.

2. **C Rule.** Students in research master's/magisteriate programs are allowed to receive no more than one C grade to remain in good standing in the University.

3. **F Rule.** Students who receive a failing grade in the course of their studies will be withdrawn from the program. Students may apply for readmission. Students who receive another failing grade after re-admission will be withdrawn from the program.

4. **Time Limit.** All work for a master's/magisteriate degree for full-time students must be completed before or during the calendar year, 12 terms (four years) from the year of initial registration in the program at Concordia University; for part time students the time limit is 15 terms (five years). Any student who does not complete their master's program within the time limit must submit a reasoned request for an extension to the Educational Studies Committee up to a maximum of two extensions. This Committee will recommend or not recommend to the School of Graduate Studies whether they can maintain their registration in the program.

5. **Graduation Requirement.** In order to graduate, students must have a cumulative GPA of at least 3.00.

Master of/Magisteriate in Arts without Thesis (Option A)

Students will take eleven 3-credit courses plus ESTU 692: Directed Study (with Extended Essay or Research Project) (12 credits). In consultation with their academic advisor, students must normally take at least four core courses (see below).

Master of/Magisteriate in Arts with Thesis (Option B)

Students will take eight 3-credit courses plus ESTU 690: Thesis and Tutorial (21 credits). In consultation with their academic advisor, students must normally take at least two core courses (see below).

Concentration in Adult Education. In either Option A or Option B, students may complete a concentration in Adult Education. As part of the required core courses of both options, students must take ESTU 670 (3 credits) and three 3-credit courses chosen from adult education topic courses (i.e. ESTU 671-677 below).

Courses

Courses listed indicate the full range of offerings. They are offered subject to the availability of faculty, and (with the exception of a minimum of six core courses) not all in a given year. All are 3-credit (one-term) courses unless otherwise indicated.

Core Courses

Specific topic areas of study include: Issues of Difference: Gender, Class and Race; politics and education; class, culture and education; educational problems in historical and philosophical perspectives; minority status and learning; literacy; inter-cultural and cross-cultural education; school and society; curriculum, popular culture and education; and comparative and intercultural education. Courses listed indicate the full range of offerings. They are offered

subject to the availability of faculty and (with the exception of a minimum of six core courses) not all in a given year. All are 3-credit (one term) courses unless otherwise indicated.

ESTU 601 Educational Concepts and Research
Effective educational research requires careful reflection about both the concepts we are investigating and the concepts we are implicitly or explicitly using in our investigation. This course is concerned with ideas and procedures for clarifying and testing educational concepts. In the first part of the course, we will examine some general notions about educational language falling under such headings as slogans, metaphors, terms and distinctions; and we will examine some ideas relevant to educational theory from the "new philosophy of science". In the second part of the course, students will participate in group projects investigating areas of educational research (to be selected with the instructor) currently in theoretical "flux".

ESTU 611 Educational Problems in Philosophical Perspective
This course examines the traditions of educational theory and practice stemming from Plato, Rousseau, the Utilitarians, Marx, Dewey, Whitehead, Existentialism and analytical philosophy.

ESTU 612 Educational Problems in Historical Perspective
The course seeks to acquaint students with a broad historical approach to a variety of significant educational issues. The emphasis will be placed on the examination of a number of critical components of modern educational thought and practice (comprising e.g., alternative schools of educational thought, politics and education, the changing curriculum, or the organization of schooling) as seen and presented in historical perspective.

ESTU 613 Anthropological Concepts and Methods in Education
The course introduces the students to qualitative methods in educational research. The first purpose is to review studies of education which utilize anthropological concepts and/or methods. The second purpose is to examine the three principal foci of qualitative research in the area: a. schools and their relations with the socio-cultural milieu in which they exist; b. the description and analysis of classroom processes; c. the study of individual pupils and educators. The third purpose is to assess the strengths and weaknesses of studies focusing on these areas. This includes describing and discussing some of the systematic methodological biases apparent in the literature and suggesting directions for future research.

ESTU 614 Social Psychological Foundations of Education
The course provides a basic understanding of the ways in which psychologists examine and analyze human behaviour, collect and interpret data, develop theories and form generalizations. It is not intended as a general survey course in the area of educational psychology. Several topics in an area will be studied

in order to exemplify the methods and techniques employed in the psychological analysis of behaviour in educational settings.

ESTU 615 Research Issues and Methodologies in Education
The course provides students with the abilities needed to locate, understand, evaluate and synthesize primary sources in the research literature. The main objective is to develop an appreciation for the processes and methods employed in the various traditions of educational research. This course is intended for all graduate students who wish to gain a fundamental understanding of research issues and methodologies in the fields of education and adult education.
Note: Students who have taken ESTU 676C may not take this course for credit.

ESTU 635 Studies in Educational Change
This course is concerned with the investigation and comparison of problems of education in the context of time and society. Concentrating on concrete "case studies" chosen from the 19th century and the contemporary period, it focuses on the principles on which systems of education are constructed, and their change or retention, in the broad socio-economic and ideological context.

ESTU 644 School and Society
This course is concerned with the family, the educational system, the economy and the polity, and with the relations between them. The main concern is with social institutions and the socialization process with which they are involved. Particular emphasis will be placed on the social class differentials in the conditions of socialization and educational opportunity, and on social class differentials in educational achievement.

ESTU 670 Adult Education as a Field of Study
This course is designed as a survey at an advanced level, of the theory and practice of adult education through an examination of the existing literature. Emphasis will be placed on helping the student gain knowledge, understanding, and a critical perspective of the following: aims; history and philosophy; needs and characteristics of adult learners; functions and skills of adult education practitioners; settings, agencies and program areas; and planning and evaluation in adult education. A Canadian and Quebec perspective will be emphasized.

Topic Courses

ESTU 602 Educational Theory
ESTU 603 The Philosophy of the Curriculum
ESTU 604 Philosophy of Education
ESTU 606 Study of a Philosopher of Education
ESTU 608 Selected Area of Education
ESTU 620 History of Canadian Education
ESTU 631 Anthropology and Education I

ESTU 632 Anthropology and Education II
ESTU 633 History of Educational Ideas
ESTU 640 Sociology of Education
ESTU 641 Topics in Sociology of Education II
ESTU 642 Selected Topics in Educational Problems
ESTU 643 The Education of Immigrants and Minorities
ESTU 645 Curriculum Theory
ESTU 648 Politics and Education
ESTU 650 Social Psychology of Education
ESTU 653 Psychology of Education
ESTU 671 Adults as Learners
ESTU 672 Facilitating Adult Learning
ESTU 673 Administration of Adult Education Programs
ESTU 674 Evaluating Adult Learning Projects
ESTU 675 Concepts and Values in Adult Education
ESTU 676/ADIP 597 Adult Education I – Selected Topics
ESTU 677/ADIP 598 Adult Education II – Selected Topics

General Courses (All Options)

ESTU 680 Reading Course
ESTU 681 Reading Course
ESTU 682 Reading Course

Thesis and Directed Study

ESTU 690 Thesis and Tutorial (21 credits)
ESTU 692 Directed Study (with Extended Essay or Research Project) (12 credits)

Tel.: 848-2424 ext. 2034

Diploma in Adult Education

Program Objectives

The Diploma in Adult Education program is designed to enhance the practice of Adult Education through the provision of formal study in the theoretical foundations, methods, and techniques required of the professional adult educator.

The Diploma in Adult Education prepares people to work as teachers and trainers, consultants, program developers and evaluators in educational institutions, industry and government, health care facilities, the military, community service agencies and the private sector. Students enrolling in this 30 credit program may specialize in an area of their own professional interest by

selecting courses which reflect this interest. Individualized programs of study may be designed in consultation with the student's advisor.

Beginning September 1, 2002 no new students will be admitted to the Diploma in Adult Education (Teacher Certification – Option II). Courses will continue to be scheduled to meet the needs of students in the program. Students must respect the time limit for completion of their program as indicated by the School of Graduate Studies.
As per the directive of the Ministère de l'Éducation, in order to be eligible for certification, all students must have completed their program before September 1, 2007.

Advanced Standing. Students in the diploma program may apply for admission with advanced standing to the Master of/Magisteriate in Arts (Educational Studies), Adult Education Concentration.

Faculty Research Interests. Research areas in Adult Education include issues such as staff development, adult learning, literacy, learning in the workplace, professional development, self-directed learning, human relations training.

Admission Requirements. For admission, a Bachelor's/Baccalaureate degree or equivalent is required. Entry into the program is based upon an assessment of the background and skills of the individual applicant. Applicants should be actively involved in some area of adult education or have the equivalent of one year's experience in the field, (for example, as group leader, trainer, nurse educator, volunteer worker, administrator in an academic institution, business, industry, government or community organization).

Applicants will be interviewed prior to admission to the program. The program is open to full-time and part-time students alike.

Application Deadlines. Detailed descriptions of the program may be obtained from the program director, Adult Education, 1400 de Maisonneuve Blvd. W., Room LB-579, Sir George Williams Campus, Concordia University, Montreal, Quebec H3G 1M8. Applicants should apply online at: http://welcome.concordia.ca/. The deadline is March 1 for Fall and September 30 for the Winter session. There is no summer admission.

Requirements for the Diploma (Adult Education Program)

1. **Credits.** Fully-qualified candidates are required to complete a minimum of 30 credits.

2. **Academic Standing.** Students receiving more than one *C* grade will have their standing in the diploma program reviewed.

3. **Courses.** All candidates are required to complete the following courses:
   ADIP 500, 585 and 586 and
   3 credits chosen from ADIP 501, 511, 512, 535, and
   3 credits chosen from ADIP 513, 514, 515, 544, and
   9 credits chosen from ADIP 510, 520, 530, 533, 540, 541, 542, 550, 551, 570, 572, 588, 589, 590, 597, 598, and
   6 credits chosen from another graduate program, in consultation with the graduate program director or student advisor.
   In special circumstances students may, in consultation with the graduate program director or student advisor, individualize their program of study within the standards set out by the School of Graduate Studies.

Courses

Courses in the following list will be offered in fall, winter and summer terms, depending upon demand and availability of faculty. Courses are worth 3 credits.

ADIP 500 Adult Education in Québec as a Field of Study
ADIP 501 Educational Concepts and Research
ADIP 510 Adult Education in Québec and Canada
ADIP 511 Educational Problems in Philosophical Perspective
ADIP 512 Educational Problems in Historical Perspective
ADIP 513 Anthropological Concepts and Methods in Education
ADIP 514 Social Psychological Foundations of Education
ADIP 515 Research Issues and Methodologies in Education
ADIP 520 Adults as Learners
ADIP 530 Roles and Competencies of Adult Educators
ADIP 533 Facilitating Adult Learning
ADIP 535 Studies in Educational Change
ADIP 540 Introduction to Research in Adult Education
ADIP 541 Designing Adult Learning Projects
ADIP 542 Evaluating Adult Learning Projects
ADIP 544 School and Society
ADIP 550 Reflective Practice I
ADIP 551 Introduction to Administration of Adult Education Programs
EDUC 553 Education in Québec
ADIP 570 Workshops for Adult Educators
ADIP 572 Concepts and Values in Adult Education
ADIP 580 Reading Course
ADIP 581 Reading Course
ADIP 588 Advanced Topics in Adult Education
ADIP 589 Advanced Topics in Adult Education
ADIP 590 Issues in the Practice in Adult Education

ADIP 585 Integrative Internship I
Integrative Internship I is designed to allow students to build on their acquired knowledge, skills, values and attitudes through interaction with a chosen education environment. The first Internship requires students to select, contact and establish a working relation with an organization which offers educational activities to adults in their community. A supervised Special Project for an adult education provider is initiated. At this stage, the emphasis is on observation and information gathering, in preparation for taking on a more active role in Integrative Internship II. *Prerequisite:* Students must have completed at least 15 credits in their program of study, including ADIP 500 Adult Education in Quebec. This course is associated with, and normally represents, a prerequisite for Integrative Internship II.

ADIP 586 Integrative Internship II
This internship is designed to extend the student's personal aims and philosophy of adult education arrived at in Integrative Internship I by completing a supervised Special Project in an approved adult education facility, where supervision is provided by a member of a host institution in consultation with the professor. *Prerequisite:* ADIP 585.

ADIP 593 Practicum I
This course is designed for students who possess a Provincial Teaching Authorization or are currently working in adult education in the Quebec school system. Students enrolling in this practicum are expected to have completed courses in theoretical and conceptual content in the field of adult education. This practicum provides an opportunity in which they can apply this knowledge to their classroom teaching experience.
Note: Upon presentation of a statement from the school authority attesting to the satisfactory performance in an adult education classroom for a minimum of four months, a student may be exempted from this course. *Prerequisite:* At least 18 credits in the Diploma in Adult Education Teacher Certification Option II.

ADIP 594 Practicum II
This course is designed for students who possess a Provisional Teaching Authorization or are currently working in adult education in the Quebec school system. Satisfactory classroom performance in the student's subject matter specialty is judged on the basis of reports from the school principal, mentors chosen from the teaching staff, and a supervisor from the University. *Prerequisite:* ADIP 593.

ADIP 597 Adult Education I – Selected Topics

ADIP 598 Adult Education II – Selected Topics

Tel.: 848-2424 ext. 2032; Fax: 848-4520

Child Study

Master of/Magisteriate in Arts (Child Study)

Program Objectives

The master's program in Child Study provides the opportunity to study a variety of issues relating to children and education (pre-school to high school) from developmental, social, and cultural perspectives. These issues may be related to the child in the family, the community, or the school environment with areas of concentration in language development, socialization, curriculum and instruction, day care issues, and children and technology.

Students choosing the Thesis Option will pursue advanced studies in a particular area of interest and will be required to conduct a research project culminating in a thesis. Those selecting the Internship Option will be required to pursue advanced studies in a chosen area, engage in an internship, and write a comprehensive Internship Report.

Faculty Research Interests

Research in child study covers subjects such as children's social behaviour in day care settings, children and technology, historical perspectives on child care, early childhood curriculum, popular culture of youth and children, physical activity, health and well-being, gender issues, teaching and teacher education, family and children, international issues in early childhood education, learning and cognition, assessment and evaluation, and educational psychology.

Admission Requirements. Applicants will be selected on the basis of past academic records, letters of recommendation, field experience, and the relevance of their proposed research to the areas of specialization of program faculty. To be accepted into the program, a student is required to have an undergraduate degree with a minimum of a *B* average and a significant concentration in child study, education, or a related discipline. In addition, at least one year of professional experience in the field of child care, education, or related areas is desirable. Bilingualism is an asset but not a requirement. The equivalence of foreign degrees is assessed by the School of Graduate Studies and is determined by consideration of the total length of program study (primary through university) as well as the quality and content of post-secondary study and its relevance to the program.

Application Deadlines. Applications should be received no later than March 1 for Fall session and September 30 for the Winter session. A detailed description

of the program may be obtained from the Department of Education, Room LB 579, Concordia University, 1455 de Maisonneuve Blvd. West, Montreal, Quebec H3G 1M8. Applicants should apply online at: http://welcome.concordia.ca/.

Requirements for the Degree

1. **Credits.** A fully qualified candidate is required to complete a minimum of 45 credits.

2. **Residence.** The minimum residence requirement is one year (3 terms) of full-time study, or the equivalent in part-time study.

3. **Languages.** For students intending to seek employment in Quebec, a good working knowledge of French and English will be indispensable.

4. **Courses.** Students may enter either Option A or B outlined below and must complete CHST 600, 601, 603, 604, and 607 as the core segment of their program.

5. **Academic Standing.** One *C* grade may count toward the required or optional courses in the program. If a student is allowed to continue, only one *C* grade may count toward graduation. For additional *C* grades, the student must either repeat the course that was granted a *C* and receive either an *A* or *B* grade, or register for an acceptable substitute and receive an *A* or *B* grade. If a student receives a grade of *F* in any course, the student will be required to withdraw from the program.

Master of/Magisteriate in Arts with Thesis (Option A)

1. **Core Courses.** CHST 600, 601, 603, 604, and CHST 607 (6 credits).

2. **General Elective Courses.** A minimum of 6 credits from CHST 610, CHST 612, CHST 616, CHST 618, and CHST 620 chosen in consultation with the student's advisor.

3. **Specialized Elective Courses.** 3 credits chosen in consultation with the student's advisor from CHST 625, CHST 635, CHST 645, CHST 655, CHST 665, and CHST 675. Three credits may be selected from cognate courses, that is, from courses offered in another graduate program.

4. **Thesis Proposal.** CHST 697 (3 credits).

5. **Research and Thesis.** CHST 698 (15 credits).

Master of/Magisteriate in Arts with Internship (Option B)

1. **Core Courses.** CHST 600, 601, 603, 604, and CHST 607 (6 credits) (18 credits).

2. **General Elective Courses.** A minimum of 9 credits chosen from CHST 610, CHST 612, CHST 616, CHST 618, and CHST 620 chosen in consultation with the student's advisor.

3. **Specialized Elective Courses.** 9 credits chosen in consultation with the student's advisor from CHST 625, CHST 635, CHST 645, CHST 655, CHST 665, and CHST 675. Six of the credits may be selected from cognate courses, that is, from courses offered in another graduate program.

4. **Internship.** CHST 693 (9 credits).

Courses

The following courses are offered:

Required Courses

CHST 600 Advanced Child Development
This course will provide a study of theories of child development and current research. Various theoretical approaches to child development (e.g., cognitive developmental, ethological, social learning) will be addressed and will serve as the basis for examination of the social, emotional, and intellectual development of the child. Topics may be discussed in relation to the practice of child study.

CHST 601 Curriculum and Instruction
This course will examine principles and models of curriculum and instruction as they relate to preschool and primary education. Students will be assisted in developing critical and analytical skills appropriate to the discussion of curriculum issues.

CHST 603 Seminar in Child Study
This course serves as an introduction to the M.A. in Child Study program. The objectives are: to introduce students to the research interests of Early Childhood Education faculty members; to introduce students to the diversity of areas related to the development, socialization and education of children and to discuss current issues in the early childhood field. The sessions will include presentations by the seminar leader, presentations by students on the research interests of Early Childhood Education faculty members, and on issues of interest in the field of child study.

CHST 604 Observation and Evaluation of the Young Child
Observational measurement is an important technique in the evaluation of skills and behaviours of young children. It eliminates the necessity for young children to be able to read and comprehend the directions required in a normal pencil and paper form of evaluation. The process of assessing via observation

makes it possible to address behaviours which otherwise might be immeasurable. Students will be taught formal and informal observational methods. The particular advantages and/or disadvantages of all formats will be discussed. Students will be required to complete observational assessments and standardized preschool evaluations.

CHST 607 Methods of Inquiry
This course provides an introduction to the philosophy of inquiry and to the main methodologies of inquiry that are particularly appropriate to Child Study and provides guidance in the communication of results of research and reflective practice. This course also provides laboratory work with appropriate computer software for each methodology.

General Elective Courses

CHST 610 Cognition and Learning
This course will examine cognitive and behavioural approaches to human learning. The implications for early childhood of current theory and research on information processing will be covered. Topics such as knowledge acquisition, memory, attention, problem solving, and cognitive versus associative theories of conditioning will be discussed.

CHST 612 Language Acquisition and Development
Consideration of how young children acquire language is important to understanding their cognitive, social, and emotional development. In the context of the M.A. in Child Study program, this course is designed to provide students with a theoretical background in language acquisition and development as well as competencies in observing children's speech and in providing a suitable environment for rich language development. We will examine the ways in which a child acquires the sounds, meanings, and syntax of language.

CHST 616 Theoretical Perspectives on Children and Technology
The course concentrates on the interaction between young children and the new technologies. Research related to the effects of media such as television, micro-computers, and other interactive technologies is discussed. The central focus of the course is the possible effects of these new technologies on the cognitive and affective development and children's understanding of television, media literacy's place in school, the use of the microcomputer in the school environment and its effect on the learning and thinking and community access cable television's role in the school. Emphasis is placed on the developing child in the context of various media.

CHST 618 Early Childhood Settings
This course provides an overview of factors which affect the care and education of young children. Policies and issues to be studied will include the following:

the physical environment of the early childhood settings, health, safety, curriculum, and teacher-child ratios.

CHST 620 Theories of Play and Social Behaviour
This course will explore the value of play in the development and education of the young child. An historical perspective of human play will be presented and the major theories of human play in relationship to child development will be studied. Readings will focus upon the work of Bruner, Erickson, Parten, Piaget, Smilansky, Erikson, and Vygotsky. Issues to be considered include the role of play in social, emotional and cognitive development, styles of play as related to developmental level, play materials and skill development, and the role of play in the early childhood curriculum.

Note: For specialized elective course descriptions and further information regarding thesis and internship guidelines, consult the Guide to the M.A. in Child Study available from the Department of Education.

Specialized Elective Courses

CHST 625 Topics in Concept Development
CHST 635 Topics in Curriculum and Instruction
CHST 645 Topics in Children and Technology
CHST 655 Topics in Language Development
CHST 665 Topics in Socialization
CHST 675 Topics in Child Study

Directed Study Courses

CHST 680 Directed Study (3 credits)
CHST 681 Directed Study (3 credits)

Internship Option

CHST 693 Internship (9 credits)

Thesis Option

CHST 697 Thesis Proposal (3 credits)
CHST 698 Research and Thesis (15 credits)

Cognate Courses

Students in Option A are permitted to register for one elective course offered in another graduate program. Students in Option B are permitted to register for two elective courses offered in other graduate programs. In all cases, prior permission of the student's advisor is required. Students may also register for a maximum of 6 credits of Directed Study courses.

Tel.: 848-2424 ext. 2034; Fax: 848-4520
e-mail: nadine@education.concordia.ca

*Applied Linguistic*s

Programs

The Department of Education offers the degree of Master of/Magisteriate in Arts (Applied Linguistics) and a Graduate Certificate in Teaching English as a Second Language. The program is intended primarily for students with experience teaching second languages who wish to pursue graduate study in areas related to second language teaching and learning.

Program Objectives

The Master of/Magisteriate in Arts in Applied Linguistics has as its objectives to broaden the scope of theoretical knowledge in the field of applied linguistics and to find new and practical applications for that knowledge. Course offerings include English grammar and phonology, semantics, methods of evaluation, second language teaching methodology, bilingualism, language acquisition and syllabus design. The program offers students an environment in which they can hone their academic and research skills while developing their ideas for practical applications.

Faculty Research Interests

Research conducted by the faculty is extensive and varied. One major research emphasis is second language learning and teaching under a variety of instructional conditions. This includes documentation of techniques currently employed, investigation of the distribution of instructional time (intensive vs. distributed teaching), the evaluation of learning outcomes in innovative programs, and the development of learner language. Other areas of research concern the acquisition of second-language phonology (including the application of such knowledge to teaching pronunciation), the study of sociolinguistic influences on language development in second-language learners and bilinguals, as well as the investigation of cognitive aspects of language learning in and outside the language classroom. Other faculty research concerns the application of frequency-based approaches to the teaching and learning of second language vocabulary and language test development and validation. Finally, research is also conducted on issues relevant to the training of novice teachers of second languages (e.g., teacher beliefs and thinking). Graduate students take part in research projects in special topics courses and thesis projects and as paid research assistants.

Master of/Magisteriate in Arts (Applied Linguistics)

Admission Requirements. 1. Competence in written and spoken English; 2. knowledge of another language; 3. an undergraduate degree with at least a *B* average, including courses in phonetics and English structure (6 credits), first and second language acquisition (3 credits), and methods and techniques of second language teaching (6 credits).

Applicants who meet requirements 1 and 2 but whose undergraduate degrees do not include all the courses listed in requirement 3 above will be required to take up to 15 credits of prerequisite courses in addition to the requirements for their MA degree, or to enroll in a qualifying program.

The acceptability of applicants for admission to this program and the introductory course requirements will be determined by the Applied Linguistics graduate program committee. Preference will be given to candidates who have experience in second-language teaching.

Application Deadlines. A detailed description of the program may be obtained from the Education Department. Applicants should apply online at: http://welcome.concordia.ca/. The deadline for completed applications is February 1 for those intending to begin in September and September 15 for those intending to begin in January. No summer admission.

Financial Assistance. Students are encouraged to apply for scholarships and fellowships, especially those offered by the F.Q.R.S.C. (Quebec) and Concordia University. Part-time teaching positions may be available for qualified full-time students with experience in teaching English as a second language. In addition, a limited number of assistantships are awarded to graduate students each year.

Requirements for the Degree

1. **Credits.** A fully-qualified candidate is required to complete a minimum of 45 credits.

2. **Residence.** The minimum residence is one year (3 terms) of full-time study, or the equivalent in part-time study.

3. **Courses.** Students may select one of two options, A or B, outlined below.

Academic Regulations

1. **GPA Requirement.** The academic progress of students is monitored on a periodic basis. To be permitted to continue in the program, students must obtain a cumulative Grade Point Average (GPA) of 3.00 based on a

minimum of 12 credits. Students whose GPA falls below 3.00 are considered to be on academic probation during the following review period. Students whose GPA falls below 3.00 for two consecutive review periods are withdrawn from the program.

2. **C Rule.** Students in research master's/magisteriate programs are allowed to receive no more than one C grade to remain in good standing in the University.

3. **F Rule.** Students who receive a failing grade in the course of their studies will be withdrawn from the program. Students may apply for readmission. Students who receive another failing grade after re-admission will be withdrawn from the program.

4. **Time Limit.** All work for a master's/magisteriate degree for full-time students must be completed within 12 terms (4 years) from the time of initial registration in the program at Concordia University; for part-time students the time limit is 15 terms (5 years).

5. **Graduation Requirement.** In order to graduate, students must have a cumulative GPA of at least 3.00.

Master of/Magisteriate in Arts with Thesis (Option A)

All students must: 1. take 15 credits from the core courses; 2. take any 6 credits from other applied linguistics offerings or from courses approved by the Graduate Program Director; 3. write a research paper, APLI 696 (3 credits); 4. write a thesis, APLI 691 (21 credits). Up to 9 credits from other departments or universities may be credited toward the degree.

Master of/Magisteriate in Arts without Thesis (Option B)

All students must: 1. take 15 credits from the core courses; 2. take any 27 credits from other applied linguistics offerings or from courses approved by the Graduate Program Director; 3. write a research paper, APLI 696 (3 credits). Up to 9 credits from other departments or universities may be credited toward the degree.

Core Courses

All students must take the following core courses: APLI 604, APLI 621, APLI 623, APLI 630 and APLI 660.

APLI 604 The Grammars of English (3 credits)
This course examines the different approaches that have been used to analyze and describe the English language, as these relate to the teaching of English

and to the theoretical foundations of linguistic analysis. The typical criteria - formal, functional and semantic - used in linguistic analysis will be studied. The theoretical approaches considered range historically from traditional and structural grammar to text grammars.

APLI 621 Language Development (3 credits)
Research in second language acquisition (SLA) is surveyed in this course. Students read, critique, and discuss a number of research reports and survey articles on topics including research techniques in SLA, individual differences believed to affect success in second language learning (e.g., age, motivation), the systematicity of learner language (interlanguage, developmental sequences), the influence of learners' first language on the structure of their interlanguage, the development of general theories of SLA. The course concludes with a discussion of SLA research carried out in classroom settings.

APLI 623 Bilingualism (3 credits)
The linguistic features of languages in contact, language maintenance and language shift, individual bilingualism and institutional bilingualism are examined in this course. We examine some explanations for language planning, code-switching and mixing, language dominance, and factors that influence the choice of various patterns of bilingual education.

APLI 630 Language-Teaching Methodology (3 credits)
The general aims of this course are (a) to continue in greater depth and breadth the introduction to language teaching methodology (LTM) which began at the undergraduate level, and (b) to analyze and evaluate LTM from diachronic and synchronic perspectives. Students will examine the significant source disciplines of LTM and their contributions to the creation of a LT profession, will analyze and construct models of LT and definitions of method in LT, and will trace the origins and examine the theory and practice of communicative approaches to LT.

APLI 660 Research Methods (3 credits)
The principal aims of the course are to enable students better to evaluate reports of empirical research in the language sciences and to plan limited studies of their own. Emphasis will be placed upon the logic of research designs, the nature of scientific proof, and the assumptions underlying data analytic procedures. Case studies of published research, readings and lectures will illustrate the concepts of data, scales, models, sampling, theory, description, estimation and significance testing.

Elective Courses

Each year the department offers a selection of courses from those listed below. All courses are worth 3 credits unless otherwise noted.

APLI 601 **Phonology**
APLI 610 **Teaching and Learning Second Language Vocabulary**
APLI 612 **Semantics**
APLI 613 **History of the English Language**
APLI 616 **Pedagogical Grammar**
APLI 632 **Management and Administration**
APLI 634 **Cross-Linguistic Influence**
APLI 635 **Testing and Evaluation**
APLI 636 **Evaluating Second Language Programs**
APLI 638 **Syllabus Planning**
APLI 642 **Problems in Bilingualism**
APLI 643 **Pragmatics and Second Language Acquisition**
APLI 644 **Computers in Language Teaching**
APLI 646 **Literacy**
APLI 647 **Supervision of Practice Teaching**
APLI 651 **Special Topics in Applied Linguistics I**
APLI 652 **Special Topics in Applied Linguistics II**
APLI 653 **Special Topics in Applied Linguistics III**
APLI 654 **Special Topics in Applied Linguistics IV**
APLI 655 **Special Topics in Applied Linguistics V**
APLI 656 **Special Topics in Applied Linguistics VI** (6 credits)
APLI 671 **Reading Course in Applied Linguistics I**
APLI 672 **Reading Course in Applied Linguistics II**
APLI 673 **Reading Course in Applied Linguistics III**
APLI 674 **Reading Course in Applied Linguistics IV**
APLI 675 **Reading Course in Applied Linguistics V** (6 credits)

Thesis and Comprehensive Examination

APLI 691 **Thesis** (21 credits)
APLI 696 **Research Paper** (3 credits)

Graduate Certificate in Teaching English as a Second Language

The Graduate Certificate in Teaching English as a Second Language is intended for practicing primary and/or secondary school teachers wishing to expand their areas of teaching competence to include English as a Second Language.

Admission Requirements. Students require a minimum GPA of a least 2.75 in a Bachelor/Baccalaureate in Education, a Bachelor/Baccalaureate of Arts with a Specialization in Early Childhood and Elementary Education, a Bachelor/Baccalaureate in Fine Arts with a Specialization in Art Education, or equivalent and a *Brevet d'enseignement : autorisation personnelle permanente* (a teaching diploma).

Requirements for Completion

1. **Credits.** A fully-qualified candidate is required to complete a minimum of five 3-credit courses (15 credits).

2. **Courses**

TESL 521 Introduction to the English Language (3 credits)
The aim of this course is to provide students with a broad understanding of what language is, what it is used for, and how it works. Drawing on examples from English and other languages, the course acquaints students with the basic concepts necessary to pursue further studies in Teaching English as a Second Language (TESL) and offers a broad overview of key areas, including the study of sounds, grammar, and meaning. The course serves as a prerequisite for other courses offered as part of the Certificate.

TESL 541 Language Acquisition (3 credits)
This course is an introduction to theory and research in second language acquisition. It focuses on the processes and stages of development involved in acquiring language, and helps English Second Language (ESL) teachers develop informed expectations of student learning outcomes in different second language (L2) classroom contexts. Topics covered include theories of language acquisition; comparisons between first and second language acquisition; individual differences (age, aptitude, motivation, etc.); the nature of learner grammars; and contextual factors influencing the quality and quantity of the input available to language learners. In the latter part of the course students apply their knowledge of theoretical perspectives and research findings to evaluate the effectiveness of different approaches to L2 teaching and learning. *Prerequisite*: TESL 521.

TESL 546 Language Teaching Pedagogy: Foundations (3 credits)
This course introduces students to the profession of language teaching in general, and to communicative language teaching in particular. Students become familiar with important trends and effective techniques in traditional and current language teaching methodologies. They examine principles and techniques of communicative language teaching (CLT) and apply them in practical activities that involve planning or adapting CLT lessons, teaching them to peers, and reflecting critically on this experience. *Prerequisite*: TESL 521.

TESL 556 Language Teaching Pedagogy: Primary ESL (3 credits)
The purpose of this course is to familiarize students with the principles of TESL pedagogy appropriate for use in regular and intensive ESL primary school classes. Students become familiar with the Ministère de l'Éducation, du Loisir et du Sport (MELS) primary programs and the MELS approved and complementary materials. They critically evaluate and adapt learning and

evaluation situations in light of the competencies to be developed. Topics covered in the course include lesson planning, using information technologies to enhance learning, recognizing individual differences, and focusing on language form. *Prerequisite*: TESL 521.

TESL 557 Language Teaching Pedagogy: Secondary ESL (3 credits)
The purpose of this course is to familiarize students with principles of TESL pedagogy for secondary schools and with the new Ministère de l'Éducation, du Loisir et du Sport (MELS) reform on regular and EESL (Enriched English as a Second Language) secondary education. Topics covered in this course include: integration of skills, use of literature, lesson planning, materials adaptation, evaluation techniques (e.g. portfolio assessment, self- and peer-assessment), and using computer technology to enhance learning. *Prerequisite*: TESL 521.

3. **Good Standing**. No failures on record and a weighted cumulative grade point average of at least 2.75.

4. **Graduation**. To be eligible to graduate, students must have obtained a cumulative grade point average (GPA) of at least 2.75.

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English

Faculty

Distinguished Professor Emeritus: Edward Pechter; ***Professors:*** Mary di Michele, Marcie Frank *(Chair)*, Judith S. Herz; ***Associate Professors:*** Robert Allen, Stephanie Bolster, Terence Byrnes, Jason Camlot *(Graduate Program Director)*, Jill Didur, Mary Esteve, Bina T. Freiwald, André Furlani, Laura Groening, Nicola Nixon, Kevin Pask; ***Assistant Professors:*** Mikhail Iossel, Michael Kenneally, John A. Miller, Omri Moses, Jonathan Sachs, Manish Sharma, Kate Sterns.

Programs

The Department of English offers the degree of Master of/Magisteriate in Arts.

Program Objectives

The Master of Arts program in English is informed by the expectation that the student brings to it a broad and comprehensive undergraduate foundation in English literature. The program is designed to deepen and extend that comprehensive background at a more advanced and exacting scholarly and professional level, and to develop in the student a measure of specialization in a particular area within the discipline of English literary studies. An important objective of the master's program is to introduce students to advanced study and scholarly activity in order to provide an avenue towards a Ph.D. for those who wish eventually to seek a career in university teaching and literary scholarship. Towards these ends, the program is concerned to develop in students strong analytical skills and a grounding in diverse critical and theoretical approaches. Equally, the Master of/Magisteriate in Arts in English is designed to round off a reasonably complete higher education in literary studies for those who do not intend to proceed to a further degree in the field, but who may branch into other areas as diverse as law, publishing, editing, journalism, administration, management, communications, or teaching at the high school or college level.

The Creative Writing option within the M.A. in English program combines an advanced scholarly education in English literature (with all the objectives described above) with a professional training in the art and craft of creative writing in order to produce active practitioners in the writing of poems, play, stories, and novels.

Faculty Research Interests

Members of the Department of English are actively engaged and widely published in virtually all the major areas of literary criticism and scholarship. Their publications of articles and books may be found in all fields from medieval literature to modern and post-modern literature; in English, American, Canadian and post-colonial literature; and from practical criticism to methodological and theoretical studies. Several faculty members are also well-known poets, novelists, story writers, and playwrights.

Master of/Magisteriate in Arts (English)

Admission Requirements. The Master of Arts program, with the exception of the Creative Writing option, requires an honours degree or its equivalent in English with a minimum of a *B+* (3.30 GPA) average. The Creative Writing option requires a major in English Literature or its equivalent with a minimum of a *B+* (3.30 GPA) average, together with a portfolio (four copies) of the applicant's creative work. The portfolio will be evaluated. Details about the composition of the portfolio may be obtained from the Graduate Program Director. Portfolios will not be returned to applicants but may be picked up. Applicants who lack one or two courses (12 credits or less) towards equivalency of an honours degree, but who are otherwise well qualified, may be admitted with the provision that they take additional undergraduate courses as part of their master's program. Applicants requiring three or more courses (more than 12 credits) to complete the honours equivalent will be required to take a qualifying program of prescribed undergraduate courses, and reapply to the master's program after successful completion of this course work. Applicants should feel free to consult with all members of the English department about the program. Specific matters should be addressed to the Graduate Program Director or to a member of the departmental committee on graduate studies. Students may call the graduate secretary for general information or referral.

Application Deadlines for September. Applicants should apply online at: http://welcome.concordia.ca/. An applicant must have submitted all necessary materials, including completed application forms, official transcripts, letters of recommendation and other supporting documents by whichever deadline applies below. It is the responsibility of students to check on the completeness of their dossier. If desired, term papers, honours theses, or other examples of the student's academic proficiency may be submitted as part of the applicant's dossier. All such material should bear the instructor's markings. They will not be returned. International students are required to submit a sample of their written work, such as a course paper or a thesis.

December 15: Fellowships/Assistantships and Admission
April 1: Admission (no awards)
There is no admission in January.

Fellowships and Assistantships. Qualified candidates are encouraged to apply for Concordia University graduate fellowships, as well as awards from outside agencies. In addition, a limited number of teaching assistantships are available to qualified applicants undertaking full-time graduate studies.

Requirements for the Degree

1. **Credits.** A fully-qualified candidate is required to complete a minimum of 45 credits.

2. **Residence.** All options have a minimum residence requirement of three terms of full-time study or the equivalent in part-time study.

3. **Language Requirement.** All candidates for the Master of/Magisteriate in Arts in English must demonstrate an ability to read literary or critical texts in one of the following languages: French, German, Italian, Spanish or Latin. This ability will be demonstrated by obtaining a grade of *Pass* on the examination for reading comprehension set by the Department of English. In order to substitute another language for any of those named above, the student must clearly demonstrate to the Graduate committee of English that knowledge of this language is relevant to the student's research area.

Academic Regulations

1. **GPA Requirement.** The academic progress of students is monitored on a periodic basis. To be permitted to continue in the program, students must obtain a cumulative grade point average (GPA) of 3.00 based on a minimum of 12 credits. Students whose GPA falls below 3.00 are considered to be on academic probation during the following review period. Students whose GPA falls below 3.00 for two consecutive review periods are withdrawn from the program.

2. **C Rule.** Students in master's programs are allowed to receive no more than one C grade to remain in good standing in the University (six credits). In Option C, if a student has more than three credits of C grades in Creative Writing courses, but not more than six, the credits in excess of three must be replaced by additional course work.

3. **F Rule.** Students who receive a failing grade in the course of their studies will be withdrawn from the program. Students may apply for readmission. Students who receive another failing grade after re-admission will be withdrawn from the program.

4. **Time Limit.** All work for a master's/magisteriate degree for full-time students must be completed within 12 terms (4 years) from the time of

initial registration in the program at Concordia University; for part-time students the time limit is 15 terms (5 years).

5. **Graduation Requirement.** In order to graduate, students must have a cumulative GPA of at least 3.00.

Master of/Magisteriate in Arts without Thesis (Option A)

This option offers a broad background in English literature, giving the student the opportunity to study more periods and subjects. The principal emphasis is on course work. A fully qualified candidate will take a minimum of 27 600-level course credits. In these courses students will be trained in research methods appropriate to literary study, will gain knowledge sufficient to assess and interpret research in the field, and will demonstrate their ability to conduct original research by the completion of multiple graduate research papers. In this option, the candidate will also take a comprehensive examination in two parts. The General Comprehensive Examination tests the student's knowledge of a reading list available in advance with a limited number of set texts representing the range of literature in English. The Special Field Comprehensive Examination uses texts from the general list with others chosen in consultation with the member of the department who specializes in that area. The two examinations will be offered in September, March and June. Candidates wishing to take the examination must notify the departmental graduate office not less than six weeks in advance of announced dates. For purposes of registration, the examinations are designated ENGL 696 (Comprehensive Examination: General; 9 credits) and ENGL 697 (Comprehensive Examination: Special Field; 9 credits).

Master of/Magisteriate in Arts with Thesis (Option B)

This option involves course work and intensive research on an original topic, approved by the graduate studies committee. In this option, a fully qualified candidate is required to take a minimum of 21 credits at the 600-level. A candidate wishing to elect the thesis option must not only satisfy the committee of the viability of the topic, but must also secure a member of the department willing to supervise the thesis. The English Department cannot guarantee the availability of a supervisor on every possible topic. The candidate will make an oral defence of the thesis. Theses must be submitted to the department by May 15 for Fall graduation and by February 1 for Spring graduation. For specific information concerning thesis proposals a student should consult the departmental guidelines. University regulations regarding the thesis may be found in the thesis section of this calendar. For purposes of registration, this work will be designated as ENGL 690 (Thesis).

Master of/Magisteriate in Arts in English (Creative Writing Option C)

To elect this option a candidate must have applied specifically for the Creative Writing option. A fully qualified candidate will take a minimum of 12 600-level credits from the regular academic course offerings, and 12 course credits in the writing of prose, poetry and/or drama drawn from courses numbered 670-674 (ENGL 670 and ENGL 671 are Creative Writing courses). Only six credits of creative writing workshop (from ENGL 672, 673 or 674) may be elected in any year. The candidate will submit a creative writing thesis of book length, and of a nature approved by the committee on graduate studies. Creative writing theses must be submitted to the department by May 15 for Fall graduation and by February 1 for Spring graduation. For purposes of registration, this work will be designated as ENGL 692 (Creative Writing Thesis).

Creative Writing Option students may **NOT** substitute creative writing courses for any of the required 12 course credits of academic credits.

Options A and B: In both of these options, a fully qualified candidate is required to take a minimum of six credits from any courses designated by the Graduate Committee as fulfilling the 'Period' requirement, and a minimum of three credits from any courses designated as fulfilling the 'Theory' requirement.

Note: In addition to the regulations governing the examination of master's theses outlined in this calendar, the Department of English has specific procedures for thesis examinations. Students should consult the Graduate Program Director for details.

Descriptions of all English Department graduate courses, together with bibliographies, can be found at the Department of English website: http://artsandscience.concordia.ca/english/. English graduate courses are offered in the following topic areas:

ENGL 600-604	**Special Topics in English Literature**
ENGL 605-609	**Studies in Early English Literature and Medieval Literature**
ENGL 610-614	**Studies in Renaissance Literature**
ENGL 615-619	**Studies in Restoration and Eighteenth Century Literature**
ENGL 620-624	**Studies in Nineteenth Century Literature**
ENGL 625-629	**Studies in Twentieth Century Literature**
ENGL 630-634	**Studies in Poetry**
ENGL 635-639	**Studies in Drama**
ENGL 640-644	**Studies in Fiction**
ENGL 645-649	**Studies in the History of Ideas**
ENGL 650-654	**Studies in Shakespeare**
ENGL 655-659	**Studies in American Literature**
ENGL 660-664	**Studies in Canadian Literature**

ENGL 665-669 Studies in Literary Criticism
ENGL 670-674 Seminars in Creative Writing: Prose Fiction, Poetry and Drama
ENGL 678-679 Studies in Selected Areas
ENGL 685-689 Studies in Selected Areas

Please note that in courses where a *Special Subject* is listed, this *Special Subject* is a subtitle, and may change from year to year. Consequently, when students repeat a course number in subsequent years, but with a different subtitle, they are in fact engaged in a course with completely different content. The credit value attached to a course number may likewise change from year to year.

Note: Courses in Creative Writing are normally available only to students admitted into the Creative Writing option. Occasional exceptions in special circumstances are made for entry by students in the academic options. Such entrants require the prior approval of the Graduate Program Director.

Independent (non-degree) students require the permission of the Graduate Program Director to take a course and they must possess the same kind and quality of academic background and preparation as required of students admitted to the M.A. program.

Studies in Selected Areas

ENGL 678 Selected Area I
Creative Writing Tutorial. (one-term, 3-credit course)

ENGL 679 Selected Area II
Creative Writing Tutorial. (two-term, 6-credit course) The Creative Writing tutorials may be elected only by students in Option C. They are designed to accommodate candidates whose genre (e.g., poetry or drama) is not offered during a given academic year. Candidates wishing to enroll in ENGL 678 or 679 must petition the graduate studies committee. Approval will in part depend upon the availability of resources and whether the graduate studies committee deems it beneficial for the student to undertake a tutorial course rather than a regularly scheduled course. Tutorial courses will be considered only exceptionally and for very able students.

ENGL 685 Selected Area III

ENGL 687 Selected Area IV
Bibliography and Research Methods in English. An introduction to scholarly research in English (one-term, 3-credit course)

ENGL 688 Selected Area V
Reading Course. (one-term, 3-credit course)

ENGL 689 Selected Area VI
Reading Course. (two-term, 6-credit course) After completing at least a third of the course credits (transfer credits excluded), a student may petition the graduate studies committee for permission to take up to 6 credits in a reading course to be provided through a tutorial arrangement. A reading course will be permitted only when the proposed general subject area has not been available during the span of the student's program and where the graduate studies committee is satisfied that it is beneficial for the student to take a reading course rather than a regularly scheduled graduate course. Reading courses are approved only exceptionally and only students who have demonstrated a capacity for independent work and a very high calibre of academic performance will be considered. This applies to both English 688 and English 689.

Thesis and Comprehensive Examination

ENGL 690 Thesis (24 credits)

ENGL 692 Creative Writing Thesis (21 credits)

ENGL 696 Comprehensive Examination: General (9 credits)
The "Comprehensive Examination: General" works from a reading list available well in advance of the examination, with minor changes made only every three years. It proposes discussion of a delimited number of texts that represent the range of literature in English. It is the sort of material that is covered in introductory courses in English Literature that candidates have already met with in undergraduate and graduate programs.

ENGL 697 Comprehensive Examination: Special Field (9 credits)
The "Comprehensive Examination: Special Field" works with one subject. It proposes discussion of appropriate texts from the General Examination list, to which are added a small number of titles proposed by the student and approved by the Graduate Program Director and a member of the full time faculty specializing in the area.

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Études françaises

Corps enseignant

Professeur-e-s : Jean-Marc Gouanvic *(Directeur de la maîtrise en traductologie)*, Claire Le Brun, Lucie Lequin, Sherry Simon, Marie-France Wagner; ***Professeur-e-s agrégé-e-s*** **:** Paul Bandia, Philippe Caignon *(Directeur du diplôme en traduction et du certificat en langue et techniques de localisation)*, Ollivier Dyens *(Directeur du département)*, Benoit Léger, Françoise Naudillon *(Directrice de la maîtrise en littératures francophones et résonances médiatiques et du certificat en écriture)*; ***Professeur-e-s adjoint-e-s*** : Paula Bouffard, Pier-Pascale Boulanger, Sylvain David, Deborah Folaron, Djaouida Kadri, Denis Liakin, Sophie Marcotte, Natalia Teplova.

Programmes

Le département d'Études françaises offre cinq programmes de 2e cycle : la maîtrise en littératures francophones et résonances médiatiques, la maîtrise en traductologie, le diplôme en traduction (antérieurement le diplôme en rédaction/traduction), le certificat anglais-français en langue et techniques de localisation, et le certificat en écriture.

Buts des programmes

La maîtrise en littératures francophones et résonances médiatiques ouvre sur les cultures du monde. Elle étudie la production et la diffusion des littératures de la francophonie et tire son originalité de sa dimension multidisciplinaire et sociale. Ce programme de maîtrise met l'accent sur la langue française comme outil de communication et comme véhicule du littéraire. Il permet aussi d'étudier l'interaction du langage et des discours culturels (politiques et scientifiques, entre autres) dans les médias. Cette maîtrise est un tremplin pour poursuivre des études doctorales.

La maîtrise en traductologie est axée sur l'étude interdisciplinaire des rapports entre culture, langue et traduction (théorie, histoire et critique de la traduction). Elle se concentre tout particulièrement sur les composantes structurelles, systémiques et organisationnelles des processus de traduction.

Plutôt que d'aborder tous les aspects d'une profession devenue vaste, le diplôme de 2e cycle en traduction vise à fournir à l'étudiant-e des compétences précises dans un secteur donné. Le but du diplôme est donc d'assurer une formation qu'on pourrait qualifier de *complémentaire* dans la mesure où elle s'ajoute à celle que l'étudiant-e a reçue antérieurement, mais non moins professionnelle. Le

programme s'adresse à ceux qui travaillent vers le français ou l'anglais. Les candidat-e-s devront préciser dès l'entrée laquelle des deux langues sera leur langue de travail.

Le certificat anglais-français en langue et techniques de localisation est axé sur l'ensemble des opérations de traduction et d'adaptation à la société d'accueil d'un texte hautement spécialisé.

Le certificat en écriture est axé sur le développement des habiletés critiques, théoriques et créatives des étudiants. Il met l'accent sur une pratique intensive de l'écriture et a comme objectif principal de former des créateurs professionnels. Les étudiants seront formés aux processus menant à l'élaboration d'un texte efficace, ils développeront leurs habiletés à composer des textes de très bonne qualité stylistique, éditoriale et littéraire, accroîtront leur connaissance de la syntaxe et du vocabulaire, renforceront leurs connaissances linguistiques, développeront leur sens critique et interrogeront leur créativité.

Maîtrise en Littératures francophones et résonances médiatiques (Master of/Magisteriate in Arts)

Les étudiantes et étudiants à temps plein réaliseront normalement leur cycle complet d'études en deux ans et les étudiantes et étudiants à temps partiel disposeront d'un maximum de quatre années. Le nombre total de crédits est de 45 : 9 crédits de séminaires généraux, 9 crédits de séminaires obligatoires, 3 crédits pour l'examen de synthèse, 3 crédits pour la présentation du projet de mémoire et 21 crédits pour la réalisation du mémoire. Cette maîtrise offre deux options : l'étudiante et l'étudiant de l'option A doivent rédiger un mémoire, tandis que l'étudiante et l'étudiant de l'option B présentent un mémoire sous forme de réalisation médiatique en diffusion littéraire.

Les étudiantes et étudiants à temps plein suivent normalement trois séminaires par session; les étudiantes et étudiants à temps partiel suivent un ou deux séminaires par session pendant quatre sessions. Le mémoire est réalisé une fois le cycle des séminaires achevé. Il peut prendre soit la forme d'un mémoire soit la forme d'un projet innovateur de diffusion choisi par le candidat ou la candidate en fonction de son expérience, de ses études antérieures ou de son intérêt propre.

Conditions d'admission

Pour être admis à la maîtrise en littératures francophones et résonances médiatiques, la candidate ou le candidat doit être titulaire de l'un des diplômes suivants :

- Baccalauréat spécialisé (ou « Honours ») en littératures de langue française ou dans une discipline connexe, avec une moyenne générale de 3,00 (sur 4,3); ou

- Baccalauréat avec majeure en littératures de langue française ou dans une discipline connexe, avec une moyenne générale de 3,00 (sur 4,3); ou
- Baccalauréat avec une mineure en littératures de langue française couplée à une majeure dans une discipline connexe avec une moyenne générale de 3,00 (sur 4,3). Dans ce cas, quelques cours de propédeutique devront être envisagés.

La demande d'admission doit s'accompagner des pièces suivantes :
1. Les relevés de notes des universités fréquentées.
2. Trois lettres de recommandation.
3. Une lettre d'intention.

La sélection des candidatures est effectuée sur la base des éléments suivants :
1. Le dossier universitaire du candidat ou de la candidate.
2. Les réalisations du candidat ou de la candidate.
3. Une lettre d'intention.
4. Les lettres de recommandation.
5. Une entrevue qui vérifiera l'intérêt de l'étudiant pour ce programme.

Durée des études

La durée des études est d'un minimum de deux ans à temps plein.

Exigences du programme

Tout candidat doit obtenir un minimum de 45 crédits.
Toute note inférieure à C constitue un échec. Le comité d'études supérieures du département revoit annuellement le dossier de tous les étudiants et étudiantes et peut exiger que ceux et celles dont les résultats ne satisfont pas aux normes du département (moyenne générale de 3,00 sur 4,3) se retirent du programme.

L'examen de synthèse et la présentation du projet de mémoire seront sanctionnés par un échec ou une réussite. Lors d'un premier échec, seront exigés soit un examen de reprise soit une nouvelle présentation du projet.

Structure du programme

Tous les étudiants et étudiantes sont tenus à 18 crédits de séminaire, 3 crédits d'examen de synthèse, 3 crédits de présentation de mémoire et 21 crédits de thèse (mémoire ou réalisation médiatique en diffusion littéraire).

Maîtrise en littératures francophones et résonances médiatiques, avec mémoire (OPTION A)

45 crédits :
18 crédits de séminaires
3 crédits pour l'examen de synthèse après scolarité

3 crédits pour présentation du projet de mémoire devant le comité des études supérieures
21 crédits pour le mémoire (thesis)

Répartition des 18 crédits de séminaires :
9 crédits de séminaires obligatoires
9 crédits de séminaires de domaines généraux

Maîtrise en littératures francophones et résonances médiatiques, avec mémoire sous forme de réalisation médiatique en diffusion littéraire (OPTION B)

45 crédits :
18 crédits de séminaires
3 crédits pour l'examen de synthèse après la scolarité. Cet examen vient rendre compte de la compétence du candidat dans un champ précis de spécialisation
3 crédits pour la présentation du projet de mémoire sous forme de réalisation médiatique devant le comité des études supérieures
21 crédits pour la réalisation du mémoire sous forme de réalisation médiatique en diffusion littéraire, tel qu'il a été approuvé par le Comité des études supérieures

Répartition des 18 crédits de séminaires :
9 crédits de séminaires obligatoires
9 crédits de séminaires de domaines généraux

Séminaires

Séminaires obligatoires

FLIT 600 **Méthodes de recherche et de production littéraire** (3 crédits)
FLIT 601 **Étude des objets littéraires et des instruments du discours** (3 crédits)
FLIT 616 **Séminaire avancé en littérature** (3 crédits)
Co-listé : FTRA 616

Séminaires de domaines généraux*

FLIT 611 **Littératures émergentes** (3 crédits)
FLIT 612 **Topiques des discours du pouvoir dans les œuvres littéraires** (3 crédits)
FLIT 613 **Littératures traduites en version française** (3 crédits)
FLIT 614 **Littérature et environnement technologique** (3 crédits)
FLIT 615 **Réflexivité de la langue française et métadiscours dans les œuvres littéraires** (3 crédits)

FLIT 617 **Rhétorique du texte/rhétorique de l'image : leurs rapports dans les œuvres littéraires** (3 crédits)
FLIT 618 **Littératures et enseignement** (3 crédits)
FLIT 619 **Production et réception du littéraire** (3 crédits)
FLIT 620 **Tutorat en littérature** (3 crédits)
FLIT 621 **Tutorat en littérature** (3 crédits)

Autres exigences

FLIT 680 **Examen (OPTION A)** (3 crédits)
FLIT 681 **Examen (OPTION B)** (3 crédits)
FLIT 690 **Présentation du mémoire (OPTION A)** (3 crédits)
FLIT 691 **Présentation du mémoire sous forme de réalisation médiatique en diffusion littéraire (OPTION B)** (3 crédits)
FLIT 692 **Mémoire (OPTION A)** (21 crédits)
FLIT 693 **Mémoire sous forme de réalisation médiatique en diffusion littéraire (OPTION B)** (21 crédits)

* Les séminaires de domaines généraux peuvent être suivis dans un autre département de l'Université Concordia ou dans d'autres universités, avec l'accord du directeur ou de la directrice du programme de deuxième cycle en littérature et celui du département concerné. Pour les deux options, un maximum de trois crédits de séminaires non obligatoires peut être remplacé par une lecture dirigée après l'obtention de la permission du directeur ou de la directrice du 2e cycle de littérature.

FLIT 600 **Méthodes de recherche et de production littéraire** (3 crédits)
Ce séminaire vise à faire acquérir à l'étudiante et à l'étudiant une méthode de travail ou à la parfaire, tout en élargissant ses champs de connaissances dans l'approche résolument comparatiste de ce séminaire qui traitera de la littérature et d'autres disciplines connexes. Cette approche comparatiste ouvre le littéraire au sociologique, au politique, à l'esthétique, pour ne citer que quelques exemples, et permet de mettre en rapport des langages scientifiques et des systèmes sémiologiques différents, afin d'étudier dans la pratique de l'écriture littéraire, leur rôle, leurs valeurs, leurs normes idéologiques. De plus, dans ce séminaire d'études comparées, on analyse aussi le lien et les adaptations entre l'écrit et son support technique (livre imprimé, textes en ligne, textes illustrés ou messages publicitaires, entre autres).

FLIT 601 **Études des objets littéraires et des instruments du discours** (3 crédits)
Ce séminaire permet à l'étudiante ou à l'étudiant d'approfondir ses connaissances en théories et critiques littéraires (ex. : analyse structurale, linguistique, narratologique, discursive) et d'acquérir de nouvelles notions (de psychanalyse, de rhétorique, de sémiotique, entre autres) afin de parfaire sa formation générale, son jugement critique et sa sensibilité au littéraire. Il s'agit essentiellement dans ce séminaire de la mise en œuvre des théories littéraires

récentes afin de saisir, d'une part, la complexité de la logique et du fonctionnement de l'objet littéraire et, d'autre part, la mise en pratique de l'analyse du discours.

FLIT 611 Littératures émergentes (3 crédits)
Ce séminaire examine différents aspects des œuvres littéraires que le canon officiel a tardé ou tarde encore à reconnaître : littérature migrante, littérature jeunesse ou roman beur, par exemple. En mettant en relief leur passage de l'exclusion à l'inclusion, il s'agira de souligner la tension constante entre la mouvance continue des paramètres d'évaluation et leur tendance à se figer dans de nouveaux invariants. Certains concepts littéraires ou sociologiques (l'exiguïté, la déviance, l'identitaire, la réalité-fiction, la bio-fiction) seront sélectionnés et analysés en fonction des œuvres retenues.

FLIT 612 Topiques des discours du pouvoir dans les œuvres littéraires (3 crédits)
Ce séminaire s'inscrit dans l'espace social du littéraire. En effet, dans l'espace littéraire du religieux, du sexuel, du politique, du culturel en réaction à des tensions de toutes sortes inscrites dans l'objet textuel (explicites ou implicites, exogènes ou endogènes), surgit le discours d'un pouvoir. Ainsi contextualisé, le discours du pouvoir se réfléchit dans l'interdiscursivité dans laquelle apparaît le sujet. Il s'agira, dans ce séminaire, d'analyser d'une part les discours complexes du pouvoir, et d'autre part, d'en saisir les lieux communs pour trouver les topiques (violence, intolérance, peur).

FLIT 613 Littératures traduites en version française (3 crédits)
Ce séminaire examine le cas des littératures étrangères traduites dans les espaces culturels d'expression française. Seront étudiées, entre autres et en rotation, les traductions d'œuvres littéraires africaines dans la perspective des idéologies et du statut des langues « coloniales », les rapports de la littérature française avec les littératures traduites (réception, critiques d'époque, influences), la traduction de la littérature canadienne-anglaise pour la jeunesse au Québec, la traduction de la littérature américaine dans l'espace culturel français sous l'angle des genres littéraires. Les thèmes abordés sont organisés autour de la problématique de l'acclimatation de l'étranger dans la culture réceptrice et plus particulièrement des rapports de pouvoir dans la société cible.

FLIT 614 Littérature et environnement technologique (3 crédits)
Ce séminaire aborde la dimension technologique de l'innovation littéraire. L'outil informatique ajoute une dimension nouvelle à la production et à la diffusion de la littérature et entraîne sa réévaluation. Seront examinées les différentes formes qu'est amenée à prendre l'écriture littéraire (par exemple : l'épistolaire électronique, la poésie en ligne, la création interactive par de multiples auteurs). Ces différentes formes permettront de s'interroger sur la notion du littéraire pour tenter d'en saisir les mouvements multidirectionnels en constante évolution.

FLIT 615 Réflexivité de la langue française et métadiscours dans les œuvres littéraires (3 crédits)
Ce séminaire examine l'un des traits typiques de la modernité littéraire, la réflexivité de la langue en littérature et en particulier la représentation en abyme du livre dans le livre; l'œuvre est vue comme travail thématisé sur la langue et comme discours sur le matériau littéraire. Ce séminaire est l'occasion d'effectuer une analyse discursive approfondie d'un corpus francophone large dans la problématique de la subjectivité en linguistique.

FLIT 616 Séminaire avancé en littérature (3 crédits)
Le séminaire avancé en littérature vise à parfaire les connaissances de l'étudiante et de l'étudiant dans un domaine littéraire, culturel ou linguistique spécifique envisagé sous l'angle théorique ou historique. Pour animer ce séminaire, il sera fait appel aux professeurs du département en fonction de leur spécialité. Le sujet particulier du séminaire sera annoncé chaque fois que le séminaire sera donné.
Note : Ce séminaire est co-listé avec le séminaire FTRA 616.
N.B. Les étudiantes et étudiants qui ont suivi FTRA 616 ne peuvent obtenir de crédits pour ce cours.

FLIT 617 Rhétorique du texte/rhétorique de l'image : leurs rapports dans les œuvres littéraires (3 crédits)
Ce séminaire se propose d'analyser les rapports rhétoriques du texte et de l'image sous l'angle du pictural et du filmique intégré au scriptural. Comme ce sont des systèmes de signes différents qui possèdent leur rhétorique propre, il s'agira d'examiner comment la narratologie du texte s'approprie des dispositifs de ces autres systèmes. Dans ce séminaire seront abordés des textes qui incorporent le visuel ou qui en dépendent, comme les textes littéraires illustrés et les bandes dessinées.

FLIT 618 Littérature et enseignement (3 crédits)
Ce séminaire examine l'impact de l'informatique et de l'électronique sur l'enseignement de la littérature. Il s'agit d'étudier les multiples façons dont l'avènement des multimédias complète ou transforme l'enseignement traditionnel et jette un nouvel éclairage sur les œuvres à l'étude comme sur leur transmission dans un contexte pédagogique.

FLIT 619 Production et réception du littéraire (3 crédits)
Ce séminaire examine dans une perspective historique la tradition manuscrite, imprimée et électronique des textes. Il analyse les lieux de production en fonction de l'acte social de son élaboration (par exemple : cellule de moine ou de prison, salon littéraire ou café), de sa réception et de sa conservation (bibliothèque, archives, médiathèques). Ce séminaire est l'occasion de réfléchir sur l'une des problématiques fondatrices de la littérature : l'œuvre littéraire et son public.

FLIT 620 **Tutorat en littérature** (3 crédits)

FLIT 621 **Tutorat en littérature** (3 crédits)

FLIT 680 **Examen (Option A)** (3 crédits)

FLIT 681 **Examen (Option B)** (3 crédits)

FLIT 690 **Présentation du mémoire (Option A)** (3 crédits)

FLIT 691 **Présentation du mémoire sous forme de réalisation médiatique en diffusion littéraire (Option B)** (3 crédits)

FLIT 692 **Mémoire (Option A)** (21 crédits)

FLIT 693 **Mémoire sous forme de réalisation médiatique en diffusion littéraire (Option B)** (21 crédits)

Maîtrise en Traductologie (Master of/Magisteriate in Arts)

La maîtrise en traductologie est axée sur l'étude interdisciplinaire des rapports entre traduction, langue et culture.

Les étudiantes et étudiants à temps plein réaliseront normalement leur cycle complet d'études en deux années et les étudiantes et étudiants à temps partiel disposeront d'un maximum de quatre années. Le nombre total de crédits est de 45 : 18 crédits de cours, 3 crédits de projet de mémoire/thesis proposal et 24 crédits de mémoire. Les cours obligatoires (12 crédits) portent sur les méthodes, les problématiques et l'histoire; les cours en option (6 crédits à choisir) sont des séminaires sur la critique, les genres et discours ainsi que sur la traduction littéraire et la traduction en sciences humaines.

Les étudiantes et les étudiants à temps plein suivent normalement trois cours et séminaires par session; Les étudiantes et les étudiants à temps partiel suivent deux cours et séminaires par session pendant quatre sessions. Le mémoire se fait une fois le cycle des cours et séminaires achevé; il pourra prendre soit la forme d'un travail de réflexion théorique ou historique sur un corpus de traductions, soit la forme d'une traduction littéraire accompagnée d'un appareil critique important.

Conditions générales d'admission

Baccalauréat spécialisé (ou «Honours») en traduction; baccalauréat (ou diplôme supérieur) dans un domaine pertinent à la traduction, avec propédeutique, au besoin; ou diplôme de 2e cycle en traduction. Dans tous les cas, la moyenne générale obtenue sera d'au moins 3,00 (sur 4,3).

La demande d'admission doit s'accompagner des pièces suivantes :

1. Trois lettres de recommandation.
2. Une lettre d'intention où le candidat décrit sa formation et son expérience antérieures ainsi que ses attentes à l'égard du programme.
3. Des relevés de notes de l'université ou des universités fréquentées.

La sélection des candidatures est effectuée sur la base des éléments suivants :

1. Le dossier universitaire du candidat ou de la candidate.
2. Les lettres de recommandation.
3. Un examen d'admission qui vérifie les compétences linguistiques et culturelles du candidat ou de la candidate.

Durée des études

Les études à temps plein se font normalement en deux ans, et les études à temps partiel sur quatre années ou moins. Le programme comporte 45 crédits, répartis entre 18 crédits de cours, 3 crédits de projet de mémoire et 24 crédits de mémoire. Les étudiantes et étudiants admis avant 2002-2003 peuvent choisir de suivre le nouveau programme à condition d'en remplir les exigences.

Exigences du programme

Toute étudiante ou tout étudiant doit obtenir un minimum de 45 crédits.

Toute note inférieure à C constitue un échec. Le Comité d'études supérieures du département revoit le dossier de chaque étudiante et de chaque étudiant tous les ans et peut exiger que ceux et celles dont les résultats ne satisfont pas aux normes du département (moyenne générale de 3,0 sur 4,3) se retirent du programme.

Structure du programme

Toute étudiante ou tout étudiant est tenu à 18 crédits de cours, 3 crédits de projet de mémoire/thesis proposal et 24 crédits de mémoire (travail de recherche).

Cours obligatoires :	12 crédits
Cours à option :	6 crédits
Projet de mémoire/Thesis proposal:	3 crédits
Mémoire (travail de recherche) :	24 crédits

Cours

Les cours obligatoires sont des cours de fondement théorique et d'histoire de la traduction. Les cours au choix sont des séminaires spécialisés dans le domaine

sociocritique, et des séminaires de traduction en littérature et en sciences humaines.

Cours obligatoires

FTRA 600 **Méthodologie générale de la recherche en traduction** (3 crédits)
FTRA 601 **Courants contemporains en traductologie** (3 crédits)
FTRA 602 **Histoire générale de la traduction** (3 crédits)
FTRA 603 **Contextes socio-politiques et socio-culturels de la traduction** (3 crédits)

Cours au choix

FTRA 610 **Séminaire de lecture critique de traductions** (3 crédits)
FTRA 611 **Séminaire sur les genres et les discours en traduction** (3 crédits)
FTRA 612 **Séminaire avancé de traduction en sciences humaines (F)** (3 crédits)
FTRA 613 **Advanced translation seminar in social sciences and the humanities (A)** (3 crédits)
FTRA 614 **Séminaire avancé en traduction littéraire (F)** (3 crédits)
FTRA 615 **Advanced seminar in literary translation (A)** (3 crédits)
FTRA 616 **Séminaire avancé en littérature** (3 crédits)
Co-listé : FLIT 616
FTRA 680 **Tutorat en littérature (F)** (3 crédits)
FTRA 681 **Tutorial in literature (A)** (3 crédits)
FTRA 682 **Tutorat en traduction (F)** (3 crédits)
FTRA 683 **Tutorial in translation (A)** (3 crédits)
FTRA 684 **Tutorat en linguistique (F)** (3 crédits)
FTRA 685 **Tutorial in linguistics (A)** (3 crédits)

FTRA 698 **Étude d'un sujet particulier / Special Topics** (3 crédits)

Autres exigences

FTRA 686 **Projet de mémoire / Thesis Proposal** (3 crédits)
FTRA 692 **Mémoire (travail de recherche)** (24 crédits)

Note : Les étudiantes et étudiants admis avant 2002-2003 et qui ont préféré rester dans l'ancien programme peuvent suivre FTRA 690 (21 crédits) à condition d'avoir satisfait aux exigences de l'ancien programme.

Les étudiantes et les étudiants admis en maîtrise peuvent bénéficier d'une aide financière pendant la durée de leurs études, sous la forme d'assistanats de recherche ou d'enseignement. Ces aides varient selon les années et les étudiantes et étudiants intéressés doivent se faire connaître auprès de la direction du programme une fois admis.

Frais de scolarité et frais d'inscription

Consulter le site http://artsandscience.concordia.ca/francais/

FTRA 600 Méthodologie générale de la recherche en traduction (3 crédits)
Ce cours examine les principales méthodes et approches appliquées à l'étude de la traduction et héritées des sciences humaines et sociales, de la linguistique et de la philologie à la sociologie en passant par la sémiotique et la socio-critique. Chaque fois que cela s'impose, une place est faite à l'apport des outils informatiques dans l'analyse des traductions. Ce tour d'horizon débouche sur des questions liées à la conceptualisation en traductologie : quelle est la place de l'historicité dans la théorisation du savoir sur la traduction? La traductologie doit-elle s'autonomiser et construire une méthodologie spécifique par rapport aux autres sciences humaines? À quelles conditions cette construction est-elle possible? À l'issue du cours, l'étudiante ou l'étudiant aura une vue d'ensemble de la théorisation en traduction, ce qui lui permettra de se spécialiser en connaissance de cause dans une problématique particulière cohérente avec les visées du programme.

FTRA 601 Courants contemporains en traductologie (3 crédits)
Ce cours est axé sur les approches théoriques récentes, par exemple la théorie féministe, le déconstructionnisme, l'anthropologie culturelle appliquées à la théorisation de la traduction. Ces approches, chacune à leur échelle, mettent en discussion diverses notions traditionnelles - l'ethnicité, l'identité, la culture nationale - et conduisent à redéfinir ce qui est tenu, au XXI^{e} siècle, comme l'un des fondements spécifiques de la traduction, le transfert culturel. Ainsi, ce cours engagera l'étudiante ou l'étudiant à reconceptualiser la traduction dans des cadres contemporains définis, par exemple celui du post-colonialisme ou celui de la circulation accélérée des flux d'information par les moyens techniques modernes, notamment informatiques.
Co-listé : FTRA 539.
N.B. Les étudiantes et étudiants qui ont suivi FTRA 539 ne peuvent obtenir de crédits pour ce cours.

FTRA 602 Histoire générale de la traduction (3 crédits)
Ce cours est une introduction à l'histoire générale de la traduction, telle qu'elle apparaît dans ses continuités et dans ses discontinuités chronologiques notamment (mais non exclusivement) en Occident. Une vue en coupe est présentée à travers des thématiques permettant de dégager le rôle historique joué par les traducteurs comme acteurs sociaux proches des pouvoirs en place ou critiques de ces pouvoirs. L'accent sera mis sur la créativité des traducteurs (inventeurs d'alphabets, imitateurs de littératures étrangères, importateurs de savoirs inédits dans les sociétés réceptrices) à certaines époques clés de contacts de cultures. Le cours pourra aborder une période historique et une aire géographique données, par exemple la colonisation de l'Amérique et, plus précisément, la

place de la traduction dans la propagation des religions et l'« évangélisation » des premières Nations d'Amérique du nord.

FTRA 603 Contextes socio-politiques et socio-culturels de la traduction (3 crédits)
Ce cours situe la pratique de la traduction dans les contextes socio-politiques dans lesquels elle s'inscrit par nature. La notion de contexte socio-politique est prise au sens étroit et au sens large : au sens étroit, la traduction/localisation est envisagée comme un travail demandé à un traducteur/localisateur par un commanditaire; au sens large, la traduction/localisation est le lieu d'inscription des idéologies. La notion de contexte socio-culturel est abordée par l'anthropologie et comprend d'une part la culture en général, comme les croyances, les mœurs, les coutumes, l'art ou les savoirs, et d'autre part les cultures différenciées, c'est-à-dire un ensemble ethnographique présentant des écarts significatifs par rapport à d'autres. Dans le cadre de ce cours seront examinés les cas de bilinguisme et de multilinguisme dans le monde, le statut juridique des langues dominantes et minoritaires, l'évolution des politiques linguistiques et leurs répercussions sur la traduction, la concurrence des langues internationales et les marchés nouveaux de la traduction/localisation.
N.B. Les étudiantes et étudiants qui ont suivi FTRA 553 ou FTRA 550 ne peuvent obtenir de crédits pour ce cours.

FTRA 610 Séminaire de lecture critique de traductions (3 crédits)
Étude critique des traductions de l'anglais au français et du français à l'anglais à travers l'histoire, en tenant compte de la diversité des visées esthétiques et des contraintes institutionnelles de la traduction. L'accent est mis sur l'étude des «grandes» traductions dans les cultures d'expression anglaise et française, de *Macbeth* (W. Shakespeare), *Les Essais* (Montaigne) et *Robinson Crusoé* (D. Defoe) à *Ulysse* (J. Joyce) et *La Recherche du temps perdu* (M. Proust), en passant par *Les Contes* (J. Ferron) ou *Bonheur d'occasion* (G. Roy).
Co-listé : FTRA 540.
N.B. Les étudiantes et étudiants qui ont suivi FTRA 540 ne peuvent obtenir de crédits pour ce cours.

FTRA 611 Séminaire sur les genres et les discours en traduction (3 crédits)
Ce séminaire théorique est axé sur une analyse géno-discursive des traductions selon leurs déterminations sociologiques, principalement telles que les envisage Pierre Bourdieu dans sa théorie sociale (concepts de champ, d'habitus et d'illusio). Les traductions étudiées peuvent appartenir à diverses configurations géno-discursives : littéraires (poésie, roman) ou non littéraires (scientifiques, journalistiques). Les techniques expressives et les finalités génériques sont dégagées, d'une part, dans leurs relations avec les discours autorisés dans les sociétés où ils ont été traduits et, d'autre part, dans leurs effets (par exemple, renforcement ou transformation des hiérarchies de légitimités socio-esthétiques) dans le champ cible. Ce séminaire est l'occasion de redéfinir l'une des problématiques fondatrices de la traductologie : la relation source/cible.

Co-listé : FTRA 541.
N.B. Les étudiantes et étudiants qui ont suivi FTRA 541 ne peuvent obtenir de crédits pour ce cours.

FTRA 612 Séminaire avancé de traduction en sciences humaines (F) (3 crédits)
FTRA 613 Advanced translation seminar in social sciences and the humanities (A) (3 crédits)
Le séminaire aborde la théorie et la pratique de la traduction dans le domaine des sciences humaines, notamment sur des textes de sociologie, de psychanalyse, de théorie féministe et de philosophie. Analyse critique de traductions publiées et étude des termes consacrés dans le secteur des sciences humaines. L'étudiante ou l'étudiant traduit un texte appartenant à un secteur des sciences humaines en tirant parti de l'interaction entre les participants du séminaire. Il-elle produit un commentaire analytique sur ses choix de traduction ouvrant sur la théorisation de sa pratique de traducteur-traductrice. Les étudiantes et les étudiants du séminaire FTRA 612 ont l'anglais comme langue de départ et le français comme langue d'arrivée (F), alors que les étudiantes et les étudiants du séminaire FTRA 613 ont le français comme langue de départ et l'anglais comme langue d'arrivée (A).
Co-listé : FTRA 542 ou 543.
N.B. Les étudiantes et étudiants qui ont suivi FTRA 542 ou FTRA 543 ne peuvent obtenir de crédits pour ce cours.

FTRA 614 Séminaire avancé en traduction littéraire (F) (3 crédits)
FTRA 615 Advanced seminar in literary translation (A) (3 crédits)
En tirant parti des théories littéraires récentes, le séminaire analyse un échantillon de textes littéraires à traduire. L'étudiante ou l'étudiant traduit ces textes en bénéficiant de l'interaction entre les participants du séminaire et produit un commentaire analytique de ses choix de traduction ouvrant sur la théorisation de sa pratique de traducteur-traductrice. Les étudiantes et les étudiants du séminaire FTRA 614 ont l'anglais comme langue de départ et le français comme langue d'arrivée (F), alors que les étudiantes et les étudiants du séminaire FTRA 615 ont le français comme langue de départ et l'anglais comme langue d'arrivée (A).
Co-listé : FTRA 544 ou 545.
N.B. Les étudiantes et étudiants qui ont suivi FTRA 544 ou FTRA 545 ne peuvent obtenir de crédits pour ce cours.

FTRA 616 Séminaire avancé en littérature (3 crédits)
Le séminaire avancé en littérature vise à parfaire les connaissances de l'étudiante et de l'étudiant dans un domaine littéraire, culturel ou linguistique spécifique envisagé sous l'angle théorique ou historique. Pour animer ce séminaire, il sera fait appel aux professeurs du département en fonction de leur spécialité. Le sujet particulier du séminaire sera annoncé chaque fois que le séminaire sera donné.
Co-listé : FLIT 616.

N.B. Les étudiantes et étudiants qui ont suivi FLIT 616 ne peuvent obtenir de crédits pour ce cours.

FTRA 680 Tutorat en littérature (F) (3 crédits)
FTRA 681 Tutorial in literature (A) (3 crédits)
FTRA 682 Tutorat en traduction (F) (3 crédits)
FTRA 683 Tutorial in translation (A) (3 crédits)
FTRA 684 Tutorat en linguistique (F) (3 crédits)
FTRA 685 Tutorial in linguistics (A) (3 crédits)

FTRA 698 Étude d'un sujet particulier/Special Topics (3 crédits)
Ce cours pourra porter sur tout sujet en littérature, traduction ou linguistique qui ne figure pas déjà au programme. Le but du cours est de favoriser une approche pluridisciplinaire et de permettre l'innovation pédagogique.

Autres exigences

FTRA 686 Projet de Mémoire/Thesis Proposal (3 crédits)

FTRA 692 Mémoire (travail de recherche) (24 crédits)

L'étudiante ou l'étudiant pourra choisir d'étudier un sujet particulier en littérature, traduction ou linguistique, sous la forme d'un tutorat. Les tutorats devront être approuvés par le Comité d'études supérieures et dépendront des aptitudes et intérêts de l'étudiante et de l'étudiant ainsi que de la disponibilité et des compétences du professeur concerné.

Note : Les étudiantes et étudiants admis avant 2002-2003 et qui ont préféré rester dans l'ancien programme peuvent suivre FTRA 690 (21 crédits) à condition d'avoir satisfait aux exigences de l'ancien programme.

Diplôme en Traduction

Programme

Le département d'Études françaises offre un programme de 2e cycle à visées professionnelles : le diplôme en traduction.

Buts du programme

Le diplôme de 2e cycle en traduction offre une formation accélérée en traduction aux étudiantes et étudiants qui ont réalisé leurs études antérieures dans une discipline autre que la traduction. Les candidates et candidats au diplôme disposent des compétences linguistiques nécessaires à la traduction (maîtrise de la langue d'arrivée, compréhension fine de la langue de départ), ont un excellent dossier universitaire et démontrent des aptitudes pour la traduction. Les

candidats et les candidates précisent dès l'entrée s'ils travailleront vers le français ou vers l'anglais.

Conditions d'admission

Un examen écrit, trois lettres de recommandation, le dossier universitaire, une lettre d'intention et, au besoin, une entrevue.

Exigences du programme

Les 33 crédits du programme peuvent être effectués en une année (3 trimestres) ou à temps partiel.

Cours

1. Cours obligatoires (21 crédits)

FTRA 532 Initiation à la traduction générale (3 crédits)

FTRA 533 Aspects théoriques et pratiques de la terminologie (3 crédits)

FTRA 539 Courants contemporains en traductologie (3 crédits)
ou
FTRA 540 Séminaire de lecture critique de traductions (3 crédits)
ou
FTRA 541 Séminaire sur les genres et les discours en traduction (3 crédits)

FTRA 529 Révision et correction en traduction (A) (3 crédits)
ou
FTRA 530 Révision et correction en traduction (F) (3 crédits)

FTRA 527 Travaux dirigés (A) (3 crédits)
ou
FTRA 528 Travaux dirigés (F) (3 crédits)

FTRA 520 Stage de formation (F) (6 crédits)
ou
FTRA 522 Stage de formation de l'anglais au français I (F) (3 crédits)
et
FTRA 526 Stage de formation de l'anglais au français II (F) (3 crédits)
ou
FTRA 521 Stage de formation (A) (6 crédits)
ou
FTRA 517 Stage de formation du français à l'anglais I (A) (3 crédits)
et
FTRA 519 Stage de formation du français à l'anglais II (A) (3 crédits)

2. Cours en option (12 crédits)

12 crédits choisis parmi les cours suivants :

FRAA 523 Rédaction II (3 crédits)
FTRA 501 Traduction littéraire du français à l'anglais (3 crédits)
FTRA 504 Traduction littéraire de l'anglais au français (3 crédits)
FTRA 513 Traduction scientifique et technique du français à l'anglais (3 crédits)
FTRA 514 Traduction scientifique et technique de l'anglais au français (3 crédits)
FTRA 515 Traduction commerciale et juridique du français à l'anglais (3 crédits)
FTRA 516 Traduction commerciale et juridique de l'anglais au français (3 crédits)
FTRA 536 Informatique et traduction (3 crédits)
FTRA 542 Séminaire avancé de traduction en sciences humaines (F) (3 crédits)
FTRA 543 Advanced Translation Seminar in Social Sciences and the Humanities (A) (3 crédits)
FTRA 544 Séminaire avancé en traduction littéraire (F) (3 crédits)
FTRA 545 Advanced Seminar in Literary Translation (A) (3 crédits)
FTRA 547 Traduction économique du français à l'anglais (A) (3 crédits)
FTRA 548 Traduction économique de l'anglais au français (F) (3 crédits)
FTRA 552 Traduction automatique (TA) et traduction assistée par ordinateur (TAO) (3 crédits)
FTRA 555 Gestion de projets (3 crédits)
FTRA 558 Pratique de la localisation (3 crédits)
FRAN 598 Étude avancée d'un sujet particulier (3 crédits)
FTRA 598 Étude avancée d'un sujet particulier (3 crédits)

Liste des cours

FRAA 523 Rédaction II (3 crédits)
Ce cours est destiné à l'étudiante ou à l'étudiant qui a une bonne maîtrise de la grammaire et des exigences méthodologiques propres aux travaux universitaires, et qui possède déjà l'habileté à rédiger différents types de textes informatifs ou critiques. Par la rédaction de textes qui répondent à un but spécifique de la communication, l'étudiante ou l'étudiant approfondit les diverses techniques de composition.
Note : Les étudiantes et étudiants qui ont suivi FRAN 503 ne peuvent obtenir de crédits pour ce cours.

FTRA 501 Traduction littéraire du français à l'anglais (3 crédits)
Sensibilisation aux problèmes spécifiques à la traduction littéraire. Travaux pratiques : traduction de textes de genres variés. (A)

FTRA 504 Traduction littéraire de l'anglais au français (3 crédits)
Sensibilisation aux problèmes spécifiques à la traduction littéraire. Travaux pratiques : traduction de textes de genres variés. (F)

FTRA 513 Traduction scientifique et technique du français à l'anglais (3 crédits)
Initiation aux différents problèmes de la traduction dans les langues de spécialité scientifiques et techniques (français-anglais). Le cours est divisé en deux ou trois parties, chaque partie correspondant à un domaine spécialisé en traduction. (A)

FTRA 514 Traduction scientifique et technique de l'anglais au français (3 crédits)
Initiation aux différents problèmes de la traduction dans les langues de spécialité scientifiques et techniques (anglais-français). Le cours est divisé en deux ou trois parties, chaque partie correspondant à un domaine spécialisé en traduction. (F)

FTRA 515 Traduction commerciale et juridique du français à l'anglais (3 crédits)
Initiation aux différents problèmes de la traduction dans les langues de spécialité de l'administration, du commerce et du droit (français-anglais). Le cours est divisé en parties, chaque partie correspondant à un domaine spécialisé en traduction. (A)

FTRA 516 Traduction commerciale et juridique de l'anglais au français (3 crédits)
Initiation aux différents problèmes de la traduction dans les langues de spécialité de l'administration, du commerce et du droit (anglais-français). Le cours est divisé en parties, chaque partie correspondant à un domaine spécialisé. (F)

FTRA 517 Stage de formation du français à l'anglais I (A) (3 crédits)
FTRA 519 Stage de formation du français à l'anglais II (A) (3 crédits)
FTRA 520 Stage de formation (F) (6 crédits)
FTRA 521 Stage de formation (A) (6 crédits)
FTRA 522 Stage de formation de l'anglais au français I (F) (3 crédits)
FTRA 526 Stage de formation de l'anglais au français II (F) (3 crédits)
FTRA 527 Travaux dirigés (A) (3 crédits)
FTRA 528 Travaux dirigés (F) (3 crédits)

FTRA 529 Révision et correction en traduction (A) (3 crédits)
Ce cours aborde les différentes méthodes de révision et de correction de textes rédigés ou traduits en anglais; il sensibilise les étudiantes et étudiants aux aspects humains et techniques du métier de réviseure et de réviseur; on touche aussi aux problèmes de l'évaluation de la qualité des traductions. (A)

FTRA 530 Révision et correction en traduction (F) (3 crédits)
Ce cours aborde les différentes méthodes de révision et de correction de textes rédigés ou traduits en français; il sensibilise les étudiantes et étudiants aux aspects humains et techniques du métier de réviseure et de réviseur; on touche aussi aux problèmes de l'évaluation de la qualité des traductions. (F)

FTRA 532 Initiation à la traduction générale (3 crédits)
Ce cours vise à initier les étudiantes et étudiants aux outils notionnels et linguistiques nécessaires pour traduire efficacement des textes d'ordre général. Il leur présente aussi les étapes du processus de la traduction et les familiarise avec les outils de travail de la traduction.

FTRA 533 Aspects théoriques et pratiques de la terminologie (3 crédits)
Principes généraux de la terminologie; distinction entre langue générale et langues de spécialité; rapport entre documentation et terminologie; analyse terminologique; terminologie de traduction; supports terminographiques traditionnels et/ou informatisés; terminologie et aménagement linguistique.
N.B. Les étudiantes et étudiants qui ont suivi FTRA 531 ne peuvent obtenir de crédits pour ce cours.

FTRA 536 Informatique et traduction (3 crédits)
Ce cours porte sur la langue de l'informatique, la théorie et les concepts fondamentaux qui s'y rapportent. Il comporte des exercices de traduction, et une initiation aux outils informatisés pour les traducteurs : Internet, bases de données, systèmes de traduction assistée, utilitaires. (F/A)

FTRA 539 Courants contemporains en traductologie (3 crédits)
Ce cours est axé sur les approches théoriques récentes, par exemple la théorie féministe, le déconstructionnisme, l'anthropologie culturelle appliquées à la théorisation de la traduction. Ces approches, chacune à leur échelle, mettent en discussion diverses notions traditionnelles - l'ethnicité, l'identité, la culture nationale - et conduisent à redéfinir ce qui est tenu, au XXI^{e} siècle, comme l'un des fondements spécifiques de la traduction, le transfert culturel. Ainsi, ce cours engagera l'étudiante et l'étudiant à reconceptualiser la traduction dans des cadres contemporains définis, par exemple celui du post-colonialisme ou celui de la circulation accélérée des flux d'information par les moyens techniques modernes, notamment informatiques.
Co-listé : FTRA 601.
N.B. Les étudiantes et étudiants qui ont suivi FTRA 601 ne peuvent obtenir de crédits pour ce cours.

FTRA 540 Séminaire de lecture critique de traductions (3 crédits)
Étude critique des traductions de l'anglais au français et du français à l'anglais à travers l'histoire, en tenant compte de la diversité des visées esthétiques et des contraintes institutionnelles de la traduction. L'accent est mis sur l'étude des « grandes » traductions dans les cultures d'expression anglaise et française, de

Macbeth (W. Shakespeare), *Les Essais* (Montaigne) et *Robinson Crusoé* (D. Defoe) à *Ulysse* (J. Joyce) et *La Recherche du temps perdu* (M. Proust), en passant par *Les Contes* (J. Ferron) ou *Bonheur d'occasion* (G. Roy).
Co-listé : FTRA 610.
N.B. Les étudiantes et étudiants qui ont suivi FTRA 610 ne peuvent obtenir de crédits pour ce cours.

FTRA 541 Séminaire sur le genres et les discours en traduction (3 crédits)
Ce séminaire théorique est axé sur une analyse géno-discursive des traductions selon leurs déterminations sociologiques, principalement telles que les envisage Pierre Bourdieu dans sa théorie sociale (concepts de champ, d'habitus et d'illusio). Les traductions étudiées peuvent appartenir à diverses configurations géno-discursives : littéraires (poésie, roman) ou non littéraires (scientifiques, journalistiques). Les techniques expressives et les finalités génériques sont dégagées, d'une part, dans leurs relations avec les discours autorisés dans les sociétés où ils ont été traduits, et, d'autre part, dans leur effets (par exemple, renforcement ou transformation des hiérarchies de légitimités socio-esthétiques) dans le champ cible. Ce séminaire est l'occasion de redéfinir l'une des problématiques fondatrices de la traductologie : la relation source/cible.
Co-listé : FTRA 611.
N.B. Les étudiantes et étudiants qui ont suivi FTRA 611 ne peuvent obtenir de crédits pour ce cours.

FTRA 542 Séminaire avancé de traduction en sciences humaines (F) (3 crédits)
FTRA 543 Advanced Translation Seminar in Social Sciences and the Humanities (A) (3 crédits)
Le séminaire aborde la théorie et la pratique de la traduction dans le domaine des sciences humaines, notamment sur des textes de sociologie, de psychanalyse, de théorie féministe et de philosophie. Analyse critique de traductions publiées et étude des termes consacrés dans le secteur des sciences humaines. L'étudiante ou l'étudiant traduit un texte appartenant à un secteur des sciences humaines en tirant parti de l'interaction entre les participants du séminaire. Il-elle produit un commentaire analytique sur ses choix de traduction ouvrant sur la théorisation de sa pratique de traducteur-traductrice. Les étudiantes et les étudiants du séminaire FTRA 542 ont l'anglais comme langue de départ et le français comme langue d'arrivée (F), alors que les étudiantes et les étudiants du séminaire FTRA 543 ont le français comme langue de départ et l'anglais comme langue d'arrivée (A).
Co-listé : FTRA 612 ou FTRA 613.
N.B. Les étudiantes et étudiants qui ont suivi FTRA 612 ou FTRA 613 ne peuvent obtenir de crédits pour ce cours.

FTRA 544 Séminaire avancé en traduction littéraire (F) (3 crédits)
FTRA 545 Advanced Seminar in Literary Translation (A) (3 crédits)
En tirant parti des théories littéraires récentes, le séminaire analyse un échantillon de textes littéraires à traduire. L'étudiante ou l'étudiant traduit

ces textes en bénéficiant de l'interaction entre les participants du séminaire et produit un commentaire analytique de ses choix de traduction ouvrant sur la théorisation de sa pratique de traducteur-traductrice. Les étudiantes et les étudiants du séminaire FTRA 544 ont l'anglais comme langue de départ et le français comme langue d'arrivée (F), alors que les étudiantes et les étudiants du séminaire FTRA 545 ont le français comme langue de départ et l'anglais comme langue d'arrivée (A).
Co-listé : FTRA 614 ou FTRA 615.
N.B. Les étudiantes et étudiants qui ont suivi FTRA 614 ou FTRA 615 ne peuvent obtenir de crédits pour ce cours.

FTRA 547 Traduction économique du français à l'anglais (A) (3 crédits)
Sensibilisation aux problèmes que pose dans le domaine de l'économie la traduction du français à l'anglais (A)

FTRA 548 Traduction économique de l'anglais au français (F) (3 crédits)
Sensibilisation aux problèmes que pose dans le domaine de l'économie la traduction de l'anglais au français (F).

FTRA 552 Traduction automatique (TA) et traduction assistée par ordinateur (TAO) (3 crédits)
Préalable : FTRA 536 pour le Diplôme en traduction. Ce cours permet d'analyser les aspects morphologiques, lexicaux, syntaxiques et sémantiques des systèmes de traduction automatisée. L'étudiante et l'étudiant apprennent à appliquer les concepts analysés à un système commercialisé. Ils évaluent des traductions machine, font des exercices simples de programmation portant sur des problèmes linguistiques; ils appliquent des outils de gestion et de traduction au matériel à localiser à l'aide de logiciels de localisation, de logiciels de terminologie, et de mémoires de traduction.

FTRA 555 Gestion de projets (3 crédits)
Ce cours traite de la gestion des projets de traduction/localisation multilingues, depuis la création de l'offre de services, jusqu'au contrôle de la qualité et de la livraison, en passant par la résolution de problèmes et la gestion en situation de crise. Il comprend une partie théorique et des mises en situation. Les étudiantes et étudiants se familiarisent avec l'évaluation des ressources (humaines et matérielles) nécessaires pour exécuter le travail, l'élaboration d'échéanciers et le suivi du budget. Ils apprennent à gérer les ressources affectées aux projets afin de pouvoir respecter le mandat qui leur est confié.

FTRA 558 Pratique de la localisation (3 crédits)
L'étudiante et l'étudiant apprennent dans ce cours les stratégies de localisation et les processus de localisation; la localisation de logiciels et de localisation de sites Web; les acteurs dans les projets de localisation; la situation et le travail du traducteur dans les projets de localisation; les types de fichiers à localiser : ressources, code source, fichiers d'aide, guides imprimés, matériel marketing :

les types de logiciels localisés : logiciels système, logiciels de gestion, logiciels client, logiciels multimédia, logiciels Web.

FRAN 598 Étude avancée d'un sujet particulier (3 crédits)
FTRA 598 Étude avancée d'un sujet particulier (3 crédits)

Certificat anglais-français en langue et techniques de localisation

La localisation est l'ensemble des opérations de traduction et d'adaptation à la société d'accueil d'un contenu numérique. La localisation de traduction concerne, en particulier, l'adaptation dans une autre langue et dans une culture donnée de produits logiciels, de textes Internet et de sites Web, mais aussi de manuels techniques. En plus de la connaissance de la langue de départ et de la parfaite maîtrise de la langue d'arrivée, elle exige la connaissance approfondie de certains éléments de la culture d'accueil. En plus également des exigences traditionnelles reliées à la profession, notamment en ce qui concerne le sujet traité, la localisation repose sur une compétence technique et informatique avancée, la personne qui localise devant être capable de se servir de divers langages informatiques et d'éléments de programmation.

Conditions d'admission

BA en traduction, spécialisation ou majeure ; DESS en traduction ; MA en traductologie ; BA dans une autre discipline avec expérience en traduction ; MA dans une autre discipline avec expérience en traduction ; étude du dossier, examen d'entrée et lettre d'intention.

Exigences du programme

Les 15 crédits au programme peuvent être effectués en une année (3 trimestres) ou à temps partiel (6 trimestres).

Cours obligatoires (12 crédits)

FTRA 552 Traduction automatique (TA) et traduction assistée par ordinateur (TAO) (3 crédits)
FTRA 555 Gestion de projets (3 crédits)
FTRA 556 Programmation en localisation (3 crédits)
FTRA 558 Pratique de la localisation (3 crédits)

Cours en option (3 crédits)

FRAA 532 Écriture pour le Web (3 crédits)
FTRA 551 Tutorat en localisation (3 crédits)
FTRA 553 Contextes socio-politiques et socio-culturels de la traduction (3 crédits)

Liste des cours

FRAA 532 Écriture pour le Web (3 crédits)
Préalable : Autorisation de la direction du certificat. Ce cours s'adresse à l'étudiante ou l'étudiant qui possède une connaissance de base des techniques rédactionnelles traditionnelles et qui désire maîtriser les techniques d'écriture efficaces sur le Web. Il sera fondé sur l'étude des particularités du nouveau média, notamment ses aspects ergonomiques (comportement des lecteurs-utilisateurs, principe de lisibilité) ainsi que sur l'analyse des traitements éditoriaux (reconstruction des informations selon une arborescence, persistance, obsolescence et réactualisation de l'information, organisation des liens). Des exercices variés portant sur le style, le format, les titres et accroches ainsi que sur l'écriture hyper-textuelle amèneront l'étudiante ou l'étudiant à manier les questions de profondeur de l'information et de niveaux lecture avec efficacité ainsi qu'à concevoir des produits éditoriaux adaptés à la consultation en ligne.

FTRA 551 Tutorat en localisation (3 crédits)
Préalable : Autorisation de la direction du certificat.

FTRA 552 Traduction automatique (TA) et traduction assistée par ordinateur (TAO) (3 crédits)
Préalable : FTRA 536 pour le Diplôme en traduction. Ce cours permet d'analyser les aspects morphologiques, lexicaux, syntaxiques et sémantiques des systèmes de traduction automatisée. L'étudiante et l'étudiant apprennent à appliquer les concepts analysés à un système commercialisé. Ils évaluent des traductions machines, font des exercices simples de programmation portant sur des problèmes linguistiques; ils appliquent des outils de gestion et de traduction au matériel à localiser à l'aide de logiciels de localisation, de logiciels de terminologie, et de mémoires de traduction.

FTRA 553 Contextes socio-politiques et socio-culturels de la traduction (3 crédits)
Ce cours situe la pratique de la traduction et de la localisation dans les contextes socio-politiques et socio-culturels dans lesquels elle s'inscrit par nature. La notion de contexte socio-politique est prise au sens étroit et au sens large : au sens étroit, la traduction/localisation est envisagée comme un travail demandé à un traducteur/localisateur par un commanditaire; au sens large, la traduction/localisation est le lieu d'inscription des idéologies. La notion de contexte socio-culturel est abordée par l'anthropologie et comprend d'une part la culture en général, comme les croyances, les mœurs, les coutumes, l'art ou les savoirs, et d'autre part les cultures différenciées, c'est-à-dire un ensemble ethnographique présentant des écarts significatifs par rapport à d'autres. Dans le cadre de ce cours seront examinés les cas de bilinguisme et de multilinguisme dans le monde, le statut juridique des langues dominantes et minoritaires, l'évolution des politiques linguistiques et leurs répercussions sur la traduction,

la concurrence des langues internationales et les marchés nouveaux de la traduction/localisation.
N.B. Co-listé avec FTRA 603. Les étudiantes et étudiants qui ont suivi FTRA 550 ou FTRA 603 ne peuvent obtenir de crédits pour ce cours.

FTRA 555 Gestion de projets (3 crédits)
Ce cours traite de la gestion des projets de traduction/localisation multilingues, depuis la création de l'offre de services, jusqu'au contrôle de la qualité et de la livraison, en passant par la résolution de problèmes et la gestion en situation de crise. Il comprend une partie théorique et des mises en situation. Les étudiantes et étudiants se familiarisent avec l'évaluation des ressources (humaines et matérielles) nécessaires pour exécuter le travail, l'élaboration d'échéanciers et le suivi du budget. Ils apprennent à gérer les ressources affectées aux projets afin de pouvoir respecter le mandat qui leur est confié.

FTRA 556 Programmation en localisation (3 crédits)
Préalable : FTRA 552 ou FTRA 558. L'étudiante et l'étudiant se familiarisent dans ce cours avec l'environnement informatique : ils se familiarisent avec l'intégration et le partage des ressources d'un (et avec un) logiciel (d'une page Internet) et avec les restrictions liées au système d'exploitation; ils ont un aperçu du fonctionnement d'un logiciel (rédaction, compilation, exécution), d'un programme informatique : variables, données, contrôle; d'un langage de programmation : structure, manipulation des chaînes d'entrée et de sortie, du code « source » d'un programme informatique (ou site Internet) à localiser, des chaînes (des messages) à traduire.

FTRA 558 Pratique de la localisation (3 crédits)
L'étudiante et l'étudiant apprennent dans ce cours les stratégies de localisation et les processus de localisation : la localisation de logiciels et la localisation de sites Web; les acteurs dans les projets de localisation; la situation et le travail du traducteur dans les projets de localisation; les types de fichiers à localiser : ressources, code source, fichiers d'aide, guides imprimés, matériel marketing; les types de logiciels localisés : logiciels système, logiciels de gestion, logiciels clients, logiciels multimédia, logiciels Web.

Certificat en écriture

Programme

Le département d'Études françaises offre un programme de 2e cycle à visées professionnelles : le certificat en écriture. Le certificat en écriture est un programme s'adressant aux candidats cherchant à développer et à parfaire leur connaissance et maîtrise de l'écriture. Il prend assise sur une base inédite proposant deux formations parallèles et complémentaires : celle de la création et celle de l'approfondissement des systèmes de la langue. Il opère aussi sur deux

modes de fonctionnement : le cours et l'atelier intensif. Il offre des conférences d'éditeurs professionnels.

Conditions d'admission

Le candidat doit être détenteur d'un diplôme universitaire de premier cycle avec une moyenne générale de 3.00 (sur 4.3).

Le candidat doit fournir un exemple de production écrite (articles, compte rendu, nouvelle, poème, travaux de session ou autre), deux lettres de recommandation (du milieu universitaire ou du milieu professionnel), le dossier universitaire (moyenne minimum de 3 sur 4.3), et devra, si nécessaire, subir une épreuve d'écriture.

Connaissance du français : Tous les candidats doivent posséder une bonne maîtrise du français. Les étudiants devront se soumettre à une épreuve de rédaction de 1000 mots administrée par le département.
Propédeutique : Le candidat qui ne satisfait pas aux conditions d'admission pourrait se voir imposer des cours supplémentaires.

Exigences du programme

Le programme compte **15 crédits** répartis de la façon suivante :
12 crédits de cours obligatoires
3 crédits de cours au choix

Les 15 crédits du programme peuvent être effectués à temps plein ou partiel.

Toute note inférieure à C constitue un échec.

Cours

Cours obligatoires (12 crédits)

FRAA 530 Stylistique avancée (3 crédits)
FRAA 540 Création littéraire : fiction (3 crédits)
FRAA 541 Création littéraire : essai (3 crédits)
FRAA 593 Projet d'écriture (3 crédits)*

* Le projet d'écriture est un séminaire avancé dans le cadre duquel les étudiants produiront un texte substantiel de fiction ou de « non-fiction ». Sa particularité est son association étroite avec des éditeurs professionnels. Quatre conférences d'éditeurs sont prévues au cours de la session (deux théoriques et deux pratiques).
Les étudiantes et étudiants du Certificat inscrits dans des cours co-listés avec les cours du premier cycle devront faire des travaux supplémentaires qui seront

corrigés selon des critères plus exigeants. Chaque plan de cours comportera une note à cet effet.

Cours au choix (3 crédits)

3 crédits choisis parmi les cours suivants :

FRAA 512 Grammaire de texte (3 crédits)
FRAA 522 Questions actuelles en linguistique française (3 crédits)
FRAA 592 Tutorat en langue, linguistique ou rédaction (3 crédits)

Liste des cours

FRAA 512 Grammaire de texte (3 crédits)
Ce cours permettra aux étudiantes et aux étudiants d'améliorer leur compétence de communication écrite en approfondissant leur connaissance de la structuration du texte. En abordant les concepts de texte et de contexte, de cohérence et de cohésion et de progression thématique, les étudiantes et les étudiants verront comment l'organisation textuelle présente des règles spécifiques qui dépassent le cadre d'une grammaire de la phrase. Ils se pencheront sur les questions d'anaphore lexicale et pronominale, des articulateurs textuels, du rôle des paragraphes. Ce cours vise également à montrer l'éclairage différent que donne la grammaire du texte aux transformations de la phrase telles la forme passive, la forme emphatique, dans une perspective élargie de communication.
Note : Les étudiantes et étudiants qui ont suivi FRAA 412 ou FRAN 407 ne peuvent obtenir de crédits pour ce cours.

FRAA 522 Questions actuelles en linguistique française (3 crédits)
L'objectif de ce cours est l 'étude d'une question particulière du domaine de la linguistique, intéressant l'étudiante ou l'étudiant en langue, littérature, traduction et rédaction. Plus précisément, ce cours abordera des questions qui peuvent être rattachées à une problématique énonciative, comme l'étude des déictiques (la personne et le temps), des modalités (assertive, interrogative, impérative, exclamative) et des actes de langage. Ces questions, en lien direct avec l'interprétation des énoncés, seront traitées dans le cadre de l'analyse du discours, des théories de l'énonciation et de la pragmatique. Présentations théoriques et exercices d'observation et d'analyse de textes alterneront pour permettre à l'étudiante ou l'étudiant de mieux cerner ces questions.
Note : Les étudiantes et étudiants qui ont suivi FRAA 422, FRAN 367 ou FRAN 471 ne peuvent obtenir de crédits pour ce cours.

FRAA 530 Stylistique avancée (3 crédits)
Ce cours vise l'acquisition de procédés et techniques permettant à l'étudiante ou l'étudiant d'améliorer la concision, l'expressivité et la clarté de ses productions écrites. L'analyse de la façon dont l'organisation textuelle, les constituants syntaxiques, les procédés énonciatifs, lexicaux et rhétoriques concourent à

modifier et nuancer le sens permettront à l'étudiante ou l'étudiant de rendre ses productions mieux adaptées à un registre, à un type d'écrit et à des visées sémantiques données. Ce cours alternera la présentation des connaissances théoriques avec le travail en atelier d'écriture et les exercices pratiques qui en permettront l'assimilation.
Note : Les étudiantes et étudiants qui ont suivi FRAA 430, FRAN 366 ou FRAN 470 ne peuvent obtenir de crédits pour ce cours.

FRAA 540 Création littéraire : fiction (3 crédits)
Préalable : FRAA 530 ou autorisation du département. Au moyen d'une pratique intensive de l'écriture, ce cours permettra à l'étudiante ou l'étudiant de développer des habiletés stylistiques, syntaxiques et rédactionnelles de haut niveau orientées vers la production de textes de fiction.
Note : Les étudiantes et étudiants qui ont suivi FRAA 440 ne peuvent obtenir de crédits pour ce cours.

FRAA 541 Création littéraire : essai (3 crédits)
Préalable : FRAA 530 ou autorisation du département. Au moyen d'une pratique intensive de l'écriture, ce cours permettra à l'étudiante ou l'étudiant de développer des habiletés stylistiques, syntaxiques et rédactionnelles de haut niveau orientées vers la production d'essais et de textes théoriques.
Note : Les étudiantes et étudiants qui ont suivi FRAA 441 ne peuvent obtenir de crédits pour ce cours.

FRAA 592 Tutorat en langue, linguistique ou rédaction (3 crédits)
Étude d'un sujet particulier dans le domaine de la langue, de la linguistique ou de la rédaction.

FRAA 593 Projet d'écriture (3 crédits)
Préalable : FRAA 540 et 541. Production de textes de création ou de rédaction qui mettront en application les objectifs stylistiques, artistiques et rédactionnels déterminés à l'avance par l'étudiante ou l'étudiant en accord avec le professeur.

Loyola Science Complex, SP 165
7141 Sherbrooke St. W.
Montreal, Quebec H4B 1R6
Tel.: 848-2424 ext. 3327

Exercise Science

Faculty

Professors: Robert Kilgour *(Chair)* Robin Michel; ***Associate Professors:*** Robert Boushel, Richard DeMont, Shiping Ma, David Paris; ***Assistant Professors:*** Simon Bacon, Richard Courtemanche *(Graduate Program Director)*, Regina Crameri, Joanna Komorowski, Alain Leroux.

Programs

The Department of Exercise Science offers the degree of Master of/Magisteriate in Exercise Science with Specializations in Athletic Therapy and Clinical Exercise Physiology.

Athletic Therapy

Athletic Therapy is a paramedical profession of members who are dedicated to the prevention, immediate care, and rehabilitation of orthopaedic injuries. Prevention of injury is accomplished through conditioning programs, pre-preparation physical examinations, and support (prophylactic) techniques. Immediate care of injury involves urgent and non-urgent situations, and sideline decision-making responsibility. Rehabilitation includes the use of modalities, manual therapy, and exercise prescription leading to full ability of daily and sport activities.

Clinical Exercise Physiology

The field of clinical exercise physiology focuses on the study of acute physiological as well as pathophysiological responses to physical activity and how regular exercise alters human form and functional capacity. This field originated in the last century and is now a mainstream scientific discipline with overlap to the fields of medicine and the sport sciences. Clinical exercise physiology has a strong foundation in basic science and applied research approaches to the study of acute and chronic adaptations to exercise, ranging from sub-cellular to systemic levels of organization. The applied clinical branch of the field involves the application of various exercise modalities for the assessment of physiologic functional capacity in healthy individuals and the diagnosis and rehabilitation of dysfunction in those with chronic disease and disability.

Faculty Research Interests

Research scope in the Department probes functional mechanisms from the molecular level to whole systems. Specific topics include injury prevention through neuromuscular control, joint stabilization, bracing, and flexibility; physiological mechanisms of the control of blood flow and body temperature; movement and balance control in neuromuscular disorders; cellular and molecular adaptations to neuromuscular activity; neural control of movement; nutrition, hormones, and body composition; behavioral medicine and chronic illnesses.

Master of/Magisteriate in Science (Exercise Science) *

Program Objectives

The Master of/Magisteriate in Science (Exercise Science) is a research-intensive program in the disciplines of Athletic Therapy and Clinical Exercise Physiology. Students are trained in the skills and knowledge necessary to maximize their potential as researchers in the fields of Athletic Therapy or Clinical Exercise Physiology. Students are presented with the opportunity to engage in critical analysis and comparative study of existent theories and the ways in which they influence clinical practice. They receive training in the application of various methodologies for conducting experimental research employing various techniques.

The department's activities are supported by a number of specialized facilities including a training centre, teaching laboratories, research laboratories, and conference rooms.

The department has established links to other departments and complementary programs in the university as well as other Universities, agencies, organizations, hospitals, and clinics in the Montreal community, nationally, and internationally.

Admission Requirements. The admission requirement is a B.Sc. or equivalent degree in Exercise Science or related field of study. Applicants are selected on the basis of past academic record, letters of recommendation, relevance of proposed research to the expertise of the department, and TOEFL scores (minimum 600). Enrolment in the Master's program is limited in part by the availability of research supervisors.

If a core deficiency exists in the student's previous undergraduate background, otherwise qualified candidates may be required to take up to 12 undergraduate credits.

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* Subject to MELS approval

There are no prerequisite certification requirements for Clinical Exercise Physiology. Students applying for the Athletic Therapy option should have or be preparing to acquire CATA certification. While not required, CATA certification is an asset for acceptance into the program.

Application Deadline. Applications including transcripts, letters of recommendation, statement of research interest area and TOEFL scores should be received by February 1 for the Fall semester. Late applications will be considered if there is still space in the program.

Requirements for the Degree

1. **Credits.** A fully qualified candidate is required to complete a minimum of 45 credits.

2. **Residence.** The minimum residence requirement is one year (three terms) of full-time study, or the equivalent in part-time study.

3. **Courses.** Students must complete four 3-credit courses (EXCI 610, 612, 624, 626).

4. **Thesis.** (EXCI 680 or EXCI 690 - 33 credits). Students must select either the Athletic Therapy (EXCI 680) or Clinical Exercise Physiology (EXCI 690) Thesis track. Students must present their thesis proposal before their thesis advisory committee, and the proposal must be approved by the committee before research activity is initiated. An oral examination will be conducted before a committee of the department to test the student's ability to defend the thesis. A formal presentation of the thesis to the students' peers is also required.

Academic Regulations

1. **GPA Requirement.** The academic progress of students is monitored on a periodic basis. To be permitted to continue in the program, students must obtain a cumulative grade point average (GPA) of 3.00 based on a minimum of 6 credits. Students with a GPA that falls below 3.00 after 6 credits are considered on academic probation during the following review period. Students with a GPA below 3.00 after two consecutive review periods will be withdrawn from the program.

2. **Progress Report.** Each student's progress is formally evaluated by the student's thesis supervisor every six months and a report submitted to the Graduate Program Director.

3. **C Rule.** Students who obtain less than a grade of B- in a course are required to repeat the course. Students receiving more than one C grade will be withdrawn from the program.

4. **F Rule.** Students who receive a failing grade during their M.Sc. program will be withdrawn from the program.

5. **Time Limit.** Students are encouraged to complete the program within 2 years. Those who do not complete the M.Sc. program within two years must submit a formal request for an extension to the Graduate Program Director before they can maintain their registration in the program. Students who exceed a two-year time period may not be guaranteed funding. Part-time students may apply to the program based on the availability of faculty supervisors. It is recommended that part-time students complete the degree within 5 years.

6. **Graduation Requirement.** In order to graduate, students must have a cumulative GPA of at least 3.00.

Courses

For the M.Sc. program, every student must complete the following courses

EXCI 610 – Statistics and Research Design (3 credits)
EXCI 612 – Laboratory Techniques (3 credits)
EXCI 624 – Special Topics Seminar (3 credits)
EXCI 626 – Thesis Proposal (3 credits)
EXCI 680 – Thesis (Athletic Therapy) (33 credits)
OR
EXCI 690 – Thesis (Clinical Exercise Physiology) (33 credits)

Master of/Magisteriate in Science (Exercise Science) (45 credits)

Year I
Fall (6 credits) EXCI 610^{3}, 624^{3}
Winter (6 credits) EXCI 612^{3}, 626^{3}
Year II
33 credits EXCI 680^{33} or EXCI 690^{33}

EXCI 610 Statistics and Research Design (3 credits)
This course provides students with a background in statistics and experimental design. Students are exposed to a variety of experimental designs applicable to the exercise sciences. The course covers the application of statistical concepts in consideration of specific experimental design methods. A number of parametric and non-parametric statistics are introduced for hypothesis testing, with the

opportunity to apply relevant knowledge using various statistical software packages.

EXCI 612 Laboratory Techniques (3 credits)
The course provides a theoretical awareness of measurement principles and offers practical experience in applying techniques common to advanced research methodologies in exercise science. The potential topics to be covered are geared towards the requirements of the individual in the areas of exercise physiology and athletic therapy. These may include such topics as data acquisition and analysis, electromyography, blood flow methodologies, spectrophotometry, pulmonary gas exchange, motion analysis, and tissue histochemistry.

EXCI 624 Special Topics Seminar (3 credits)
This course is designed to meet the special needs of graduate students in the exercise science areas of concentration specific to athletic therapy and clinical exercise physiology. Topics vary within the domain to account for investigation of current and developing theories. The course involves presentation, discussion, and critical analysis of information from current scientific journal literature.

EXCI 626 Thesis Proposal (3 credits)
This course provides students with the opportunity to choose a research topic and formulate a research proposal under the supervision of a thesis advisor. The proposal should include a literature review, rationale, hypothesis, and methodology including the planned research design and data analysis. Students are required to present a seminar in the Department on their research prior to the presentation of their proposal to the thesis advisory committee.

EXCI 680 Thesis (Athletic Therapy) (33 credits)
Students are required to demonstrate their ability to carry out independent research which reflects a scientific approach. The thesis will be examined by the students advisory committee before being accepted by the Department. In addition, an oral examination will be conducted before a committee of the department to test the students ability to defend the thesis.

EXCI 690 Thesis (Clinical Exercise Physiology) (33 credits)
Students are required to demonstrate their ability to carry out independent research which reflects a scientific approach. The thesis will be examined by the students advisory committee before being accepted by the Department. In addition, an oral examination will be conducted before a committee of the department to test the students ability to defend the thesis.

Hall Bldg., H 1255-31
Tel.: 848-2424 ext. 2050; Fax: 848-2057

Geography, Planning and Environment

Faculty

Professors: S. Robert Aiken, David F. Greene, Brian Slack, Patricia A. Thornton, John Zacharias; ***Associate Professors:*** Jacqueline M. Anderson, Pascale Biron *(Graduate Program Director)*, Monica Mulrennan, Alan E. Nash *(Chair)*; ***Assistant Professors:*** Pierre Gauthier, Norma Rantisi, Craig Townsend.

Programs

The Department of Geography, Planning and Environment offers programs of study leading to the degree of Master of/Magisteriate in Science and participates in the Master of/Magisteriate in Arts (Public Policy and Public Administration) and offers both a thesis option and an internship option. It also offers a Graduate Diploma in Environmental Impact Assessment with two options: Course Option A and Internship Option B.

Faculty Research Interests

Faculty research interests are diverse and reflect the broad academic discipline of geography, planning, and environment. Most of these interests provide a basis and a context for policy-oriented studies, with an emphasis on urban, environmental, and social issues. Current research topics include river management, port development and planning, urban design, immigration, sustainable forestry, indigenous resource management, sustainable transportation, population and environment, economic development, and metropolitan government.

Master of/Magisteriate in Science (Geography, Urban and Environment Studies) *

Program Objectives

This program is designed to provide students with the theoretical foundation and methodological tools necessary to contribute to the understanding of human interventions in the environment. Through its emphasis on specialization and interdisciplinary perspectives, students are given the opportunity to carry out in-depth research work in any of the Department's areas of specialization covering three broad categories of environment: the natural or bio-physical

* Subject to MELS approval

environment; the human, cultural or behavioural environment; and the urban, built or designed environment. In addition to contributing to the advancement of knowledge, students will be well placed to enter a wide range of careers in environmental, urban planning and public policy fields.

Admission Requirements. The normal requirements for admission into the M.Sc. is a minimum GPA of 3.00 in a B.A. or B.Sc. in Geography, Planning, or Environmental Science, or an equivalent degree in a related field of study from a recognized university. Applicants are selected on the basis of a sound undergraduate academic record, strong letters of recommendation, and a convincing statement of purpose which clearly describes their academic interest in the program and intended area of research. In addition, admission is contingent on the availability of an appropriate faculty member in the Department to serve as supervisor. Some applicants with deficiencies in their undergraduate preparation may be required to take a qualifying program. Others may be required to complete certain prerequisite courses in addition to the regular graduate program.

Proficiency in English. Any student applying from outside Canada whose first language is other than English must demonstrate proficiency in the English language by writing the Test of English as a Foreign Language (TOEFL) and obtaining a minimum score of 550.

Requirements for the Degree

1. **Residence.** The minimum residence requirement is one year (three semesters) of full-time graduate study, or the equivalent in part-time study.

2. **Courses.** All students must take the following:
   9 credits: HENV 605, HENV 615, HENV 685.
   6 credits in elective courses chosen from: GEOG 610, GEOG 625, HENV 635, HENV 645, HENV 655, HENV 665, or HENV 675.

3. **Thesis.** HENV 695 (30 credits)

Academic Regulations

1. **GPA Requirement.** The academic progress of students is monitored on a periodic basis. To be permitted to continue in the program, students must obtain a cumulative grade point average (GPA) of 3.00 based on a minimum of 12 credits. Students whose GPA falls below 3.00 are considered to be on academic probation during the following review period. Students whose GPA falls below 3.00 for two consecutive review periods are withdrawn from the program.

2. **C Rule.** Students in research master's/magisteriate programs are allowed to receive no more than one C grade in order to remain in good standing in the university.

3. **F Rule.** Students who receive a failing grade in the course of their studies will be withdrawn from the program. Students may apply for readmission. Students who receive another failing grade after re-admission will be withdrawn from the program.

4. **Time Limit.** All work for a master's/magisteriate degree for full-time students must be completed within 12 terms (4 years) from the time of initial registration in the program at Concordia University; for part-time students the time limit is 15 terms (5 years).

5. **Graduation Requirement.** In order to graduate, students must have a cumulative GPA of at least 3.00.

Required Courses

HENV 605 Research Concepts and Design (3 credits)
The research seminar examines concepts relevant to human interventions in the environment, where 'environment' broadly encompasses the natural or bio-physical environment, the urban, built, or designed environment, and the human, cultural or behavioural environment. Students will benefit from the interdisciplinary nature of the program by learning more about research design issues and ethical notions in different fields and contexts. The course also allows students to develop their own research methodologies among a peer group of students.

HENV 615 Research Group Seminar (3 credits)
This seminar provides an opportunity to extend, deepen, and apply the conceptual and methodological frameworks presented in the core and elective courses. Students are required to participate in one of the proposed research groups, comprised of faculty members and other graduate students who share a particular thematic or methodological focus (e.g. GIS, sustainable communities, environmental change, sustainable transportation). Each research group is administered by a faculty member and supported by graduate students who will serve as co-coordinators to the research group.

HENV 685 Thesis Proposal (3 credits)
Students are required to select their research topic and formulate a research proposal under the supervision of a thesis supervisor and with input from a thesis committee. The written proposal will include a sound rationale for the proposed research, a detailed description of the research design and methodology, and a comprehensive literature review. Students are also required to present an oral presentation of their proposal to the Department.

The thesis proposal must be formally approved by the thesis committee and the Graduate Program Director before research activities can begin. The thesis proposal should be completed before the end of the second semester of residency in the Program and after a minimum of 6 credits in the Program have been taken.

HENV 695 Thesis (30 credits)
Students are required to demonstrate their ability to carry out original, independent research. The thesis, which will be researched and written under the direction of a supervisor and thesis committee, should normally not exceed 100 pages. Upon completion of the thesis, the student will be required to defend his/her thesis before and external examiner and his/her thesis committee.

Elective Courses

GEOG 610 Impact Assessment (3 credits)
This course examines the conceptual bases, procedures, and methodology of environmental and social impact assessment. Consideration is given to political- administrative constraints, public participation, and the procedures involved in Federal and Provincial impact statements. The conceptual bases of impact statements, such as weightings, reference points, and impact boundaries are critically examined. The methodologies of impact statements are evaluated in the context of problems of measuring direct and indirect impacts, predicting the timing of impacts, and the separation of means and ends.

GEOG 625 Directed Studies (3 credits)
Note: Students enrolled in the M.Sc. program may not repeat this course as GEOG 626.

HENV 635 Spatial Analysis (3 credits)
This course examines analytical methods for handling specifically spatial data, where the arrangement of observations in space is thought to be of significance. The emphasis is on the choice and application of appropriate methods for the analysis of various types of data that are encountered in Geography, Planning and Environmental Studies. Procedures for analyzing spatial distributions of phenomena, temporal dynamics and change are examined in relation to Geographical Information Systems (GIS) tools and statistical techniques.

HENV 645 Behaviour and the Urban Environment (3 credits)
This course provides a basic understanding of the relationship between people and the urban environment. The focus is on the collective and individual responses of people to the built or designed environment, and the way in which these responses can be used to guide projects, plans and policies. The basic studies for the location of commercial facilities and the modeling of human spatial behaviour are introduced.

HENV 655 Environmental Modeling (3 credits)
The different approaches to modeling the bio-physical, built or human environment are examined. The conceptualization of simple models to examine how human interventions affect the environment is investigated. Different modeling approaches such as system models, computer visualization and simulation are covered. Students develop a model scheme related to their thesis topic.

HENV 665 Special Topics Seminar (3 credits)
This course is designed to meet the special needs of individual graduate students. Topics vary to permit investigation of current and developing theories and research areas. Content involves presentation, discussion, and critical analysis of information from relevant scientific literature. The course will also take advantage of visiting expertise.

HENV 675 Community Participation in Environmental Conservation (3 credits)
This course addresses the question of 'how' community participation can be achieved in conservation and development initiatives. Focusing on the particular experience of local communities, it presents participatory concepts, principles, tools, and processes that have practical application to a broad range of contexts and settings (e.g. environmental impact assessment, protected area establishment, co-management, wildlife conservation).

Master of/Magisteriate in Arts (Public Policy and Public Administration - Geography Option with Thesis)

Program Objectives

The Geography option provides a program of study structured around the application of geographic knowledge and expertise to the analysis of public policy issues.

Admission Requirements. An honours degree or equivalent in Geography or an appropriate discipline. Applicants lacking sufficient Geography and/or Political Science courses in their academic record are required to take preparatory courses. Applicants lacking an appropriate background in research methods will be required to register for GEOG 602 or equivalent.

Application Deadlines. The deadline for Fall applications is March 31; the deadline for Winter application is November 15.

Requirements for the Degree

1. **Residence.** The minimum period of residence is three terms of full-time study or the equivalent in part-time study.

2. **Credits.** A fully qualified candidate is required to complete a minimum of 45 credits.

3. **Courses.** All students must take the following:
   6 credits: GEOG 601, POLI 636.
   3 credits from GEOG 630, GEOG 640, GEOG 650, GEOG 660.

4. 3 credits in elective 600 courses in Geography, Political Science or cognate disciplines, chosen with the approval of the Geography Program Director.

5. **Thesis Proposal.** GEOG 691 (6 credits).

6. **Thesis.** GEOG 694 (27 credits).

7. **Language Requirement.** Students should have, or acquire, the ability to read and understand relevant literature in both French and English. International students on a student visa at the beginning of the calendar year in which they expect to graduate may be exempted from this requirement upon application to the graduate program coordinator.

Master of/Magisteriate in Arts (Public Policy and Public Administration - Geography Option with Internship)

Admission Requirements. An honours degree or equivalent in Geography or an appropriate discipline. Applicants lacking sufficient Geography and/or Political Science courses in their academic record are required to take preparatory courses. Admission to this program depends upon the availability of an appropriate internship placement.

Requirements for the Degree

1. **Residence.** The minimum period of residence is three terms of full-time study or the equivalent in part-time study.

2. **Courses.** All students must take the following:
   6 credits: GEOG 601, POLI 636.
   6 credits from POLI 600, POLI 602, POLI 618, POLI 620, POLI 633, POLI 634.
   6 credits from GEOG 630, GEOG 640, GEOG 650, GEOG 660.

3. 6 credits in elective courses in Geography or cognate disciplines, chosen with the approval of the Geography program coordinator.

4. **Internship.** POLI 693 (9 credits); GEOG 696 Research Paper I (6 credits); and GEOG 698 Research Paper II (6 credits).

5. **Language Requirement.** Students should have, or acquire, the ability to read and understand relevant literature in both French and English. International students on a student visa at the beginning of the calendar year in which they expect to graduate may be exempted from this requirement upon application to the graduate program coordinator.

Academic Regulations

1. **GPA Requirement.** The academic progress of students is monitored on a periodic basis. To be permitted to continue in the program, students must obtain a cumulative grade point average (GPA) of 3.00 based on a minimum of 12 credits. Students whose GPA falls below 3.00 are considered to be on academic probation during the following review period. Students whose GPA falls below 3.00 for two consecutive review periods are withdrawn from the program.

2. **C Rule.** Students in research master's/magisteriate programs are allowed to receive no more than one C grade in order to remain in good standing in the university.

3. **F Rule.** Students who receive a failing grade in the course of their studies will be withdrawn from the program. Students may apply for readmission. Students who receive another failing grade after re-admission will be withdrawn from the program.

4. **Time Limit.** All work for a master's/magisteriate degree for full-time students must be completed within 12 terms (4 years) from the time of initial registration in the program at Concordia University; for part-time students the time limit is 15 terms (5 years).

5. **Graduation Requirement.** In order to graduate, students must have a cumulative GPA of at least 3.00.

Courses

GEOG 601 Geography and Public Policy (3 credits)
The course examines the relationships between the academic discipline of geography and the public policy process. It discusses such topics as the relevance of geographical information and geographical research to policy makers, the need for assessment of the spatial and environmental impact of public policies, and the role of geographers in the public policy process.

GEOG 602 Research Seminar (3 credits)
The course examines how research projects are initiated, organized, and executed. Consideration is given to such matters as problem definition, research design, and the writing of research proposals and reports. The particular needs

of policy-oriented research are examined. Students are required to critically review selected research reports and are expected to prepare a research proposal related to their research interest.

GEOG 603 Administration and Territory (3 credits)
The course examines the geographical dimensions of public administration by considering the principles of territorial administration, the geographical bases of government units, and the spatial aspects of centralization and decentralization. A major focus is the spatial reorganization of governmental and administrative structures, including the theoretical basis and the practical aspects of reform. The case for regional government and administration is discussed, and regional units in several national contexts are analyzed. The course also examines administrative geographies in an international comparative context.

GEOG 610 Impact Assessment (3 credits)
This course examines the conceptual bases, procedures, and methodology of environmental and social impact assessment. Consideration is given to political- administrative constraints, public participation, and the procedures involved in Federal and Provincial impact statements. The conceptual bases of impact statements, such as weightings, reference points, and impact boundaries are critically examined. The methodologies of impact statements are evaluated in the context of problems of measuring direct and indirect impacts, predicting the timing of impacts, and the separation of means and ends.

GEOG 620 Special Topics in Geography and Public Policy Issues (3 credits)
This is a seminar course focusing on a selected public policy issue. The geographical dimensions of the problem are assessed and the range of possible public policy responses evaluated. The course may be repeated as Geography 621.

GEOG 625 Directed Studies (3 credits)
This course may be repeated as Geography 626.

GEOG 630 Environmental Change and Public Policy (3 credits)
The course reviews some means for identifying change in the environment, emphasizing the varied technical, conceptual, and philosophical problems involved and the implications for public policy. Change is discussed as perceived change, normal ecological change, induced or planned change, and accelerated potentially catastrophic change of whatever origin.

GEOG 640 Urban Space and the Public Interest (3 credits)
This course examines city space and urban systems as problem areas for public policy makers. It analyzes those problems associated with spatial patterns and processes, and considers the role of jurisdictional constraints and interest groups

on the issues that arise. Among the issues explored are the location of public facilities, problems of the inner city, the reorganization of government areas, and inter-city competition.

GEOG 650 The Geography of Attitudes and Values (3 credits)
The course explores the varied, and often conflicting, values and attitudes that individuals and interest groups attach to nature, landscape, and place. Three themes are examined, the progression relating to both scale and perspective: firstly, attitudes towards nature in Western thought and their reflection in contemporary environmental ethics: secondly, landscape as the embodiment of attitudes and values and how landscape is evaluated; and thirdly, place as experiential product and the creation of valued places. It is recognized that attitudinal and value conflicts are inherent ingredients of public policy issues and that the resolution of such conflicts is a basic problem confronting policy makers.

GEOG 660 Immigration, Demographic Change, and Canadian Public Policy (3 credits)
Canada's changing demography - specifically its declining birth rate and consequent aging of the population - raises a series of profound issues that public policy must address. However, one of the most widely discussed solutions - that of increasing immigration into Canada - raises as many problems as it solves. This course, which will be based on lectures, seminars, and student presentations, endeavours to examine the nature of these problems.

GEOG 691 Thesis Proposal (6 credits)

GEOG 694 Master's Thesis (27 credits)
Note: Students who have received credit for GEOG 692 or GEOG 693 may not take GEOG 694.

GEOG 695 Research Paper

GEOG 696 Research Paper I (6 credits)

GEOG 698 Research Paper II (6 credits)

Diploma in Environmental Impact Assessment

Faculty

Professors: David F. Greene (Geography, Planning and Environment), Frank Muller (Economics), Patricia Thornton (Geography, Planning and Environment); *Associate Professors:* Pascale Biron (Geography, Planning and Environment - *Graduate Program Director*), Daya S. Dayanandan (Biology), Maria

Electorowicz (Building, Civil and Environmental Engineering), Jim Grant (Biology), Catherine Mulligan (Building, Civil, and Environmental Engineering), Monica Mulrennan (Geography, Planning and Environment), Justin Powlowski (Chemistry and Biochemistry), Peter Stoett (Political Science), Paul Widden (Biology).

Program Objectives

The Diploma in Environmental Impact Assessment (EIA) has been designed to fulfill three objectives:

- to develop a sound understanding of the processes and methodologies of EIA;
- to expose students to the range of broad public policy and social science considerations involved in environmental planning and resource decision-making; and
- to enhance students' existing knowledge of the biogeophysical environment.

The Diploma is directed towards individuals who hold an undergraduate degree and are interested in developing or enhancing their knowledge and skills in the environmental field. The program will be offered over three semesters (fall, winter and summer sessions). To meet the schedule of those in the work force, many courses will be offered in the evening.

Admissions Requirements. An honours degree or equivalent in an appropriate discipline in Arts or Science is required. Students who lack appropriate Ecology or Geographic Information Systems preparation are required to take preparatory courses such as BIOL 208, Environmental Biology; GEOG 374, Plant Ecology; or GEOG 363, Geographic Information Systems.

Admission Deadline: Applications must be received by March 1.

Diploma in Environmental Assessment with Courses (Option A)

Requirements for the Diploma

1. **Residence**. The minimum period of residence is two terms of full-time study or the equivalent in part-time study.

2. **Credits.** A fully qualified candidate is required to complete a minimum of 30 credits as follows:

   A. Compulsory Courses
   All students must take 12 credits: ENVS 501, ENVS 562, ENVS 563.

Note: Students with high standing (B+ or above) in GEOG 463, or equivalent, and appropriate computer skills* may be permitted to substitute an approved 3-credit course in place of ENVS 563.

* *Experience with word-processing, database, spreadsheet, statistical and presentation packages.*

B. Courses in the Social, Economic and Legal Environment
All students must take 6 credits from: ECON 559, ENVS 503, ENVS 505, GEOG 507, POLI 605.

C. Courses in the Biogeophysical Environment
All students must take 6 credits from: BIOL 508, ENVS 506, GEOG 570, GEOG 574, GEOG 630.

D. Elective Courses
All students must take a minimum of 6 credits from: BIOL 557, BIOL 601, CHEM 570, CIVI 6481, CIVI 6491, CIVI 6611, CIVI 6671, ECON 591, ENVS 598, GEOG 598, GEOG 695, POLI 634 or appropriate courses at the 500 or 600 level approved by the Director, Diploma in EIA.

Diploma in Environmental Assessment with Internship (Option B)

Requirements for the Diploma

1. **Residence**. The minimum period of residence is two terms of full-time study or the equivalent in part-time study.

2. **Credits.** A fully qualified candidate is required to complete a minimum of 30 credits as follows:

A. Compulsory Courses
All students must take 12 credits: ENVS 501, ENVS 562, ENVS 563.
Note: Students with high standing (B+ or above) in GEOG 463, or equivalent, and appropriate computer skills* may be permitted to substitute an approved 3-credit course in place of ENVS 563.

* *Experience with word-processing, database, spreadsheet, statistical and GIS packages.*

B. Courses in the Social, Economic and Legal Environment
All students must take 6 credits from: ECON 559, ENVS 503, ENVS 505, GEOG 507, POLI 605.

C. Courses in the Biogeophysical Environment
All students must take 6 credits from: BIOL 508, ENVS 506, GEOG 570, GEOG 574.

D. Elective Courses
All students must take up to 3 credits from: BIOL 557, BIOL 601, CHEM 570, CIVI 6481, CIVI 6491, CIVI 6611, CIVI 6671, ECON 591, ENVS 598, GEOG 598, GEOG 695, POLI 634 or appropriate courses at the 500 or 600 level approved by the Director, Diploma in EIA.

E. Internship
All students must take 3-6 credits from: ENVS 593 and ENVS 594.

Courses

ENVS 501 EIA: Concepts, Principles and Practice (6 credits)
The aim of Environmental Impact Assessment is to provide decision makers with information about the possible consequences of new projects, programs, plans or policies. The course covers the principles of the EIA system, analyzing the process step by step and evaluating the Canadian EIA system against appropriate criteria. Case studies and visiting professionals will augment the discussion of most topics. *Prerequisite*: Permission of the Director, Diploma in EIA.

ENVS 503 Water Resource Management (3 credits)
This course examines the complex issue of water resource management from a physical, economic, social and political perspective. Problems relating to water quality and availability are explored as well as the growing economic importance and political significance of this resource. Different strategies and policy approaches applied in the management of water resources are examined based on a case study analysis of Canadian and international experiences. A central focus of the course is the question of how to improve the management of surface water and groundwater supplies to fulfill interdependent goals of ecological and economic sustainability, as well as social equity.
Note: Students who have received credit for this topic under an ENVS 598 number may not take this course for credit.

ENVS 505 Environmental Standards (3 credits)
This course provides an overview of the International Standards Organization (ISO) standards and guidelines for industry to implement a sound Environmental Management System (EMS). These guidelines are outlined in a series of publications designated as ISO 14000. Topics covered will include: the evolution and benefits of EMS, the ISO 14001 principles, integration between ISO 9001 and 14001, the registration process, auditing an EMS, life cycle assessment, and environmental labelling. Upon successful completion of the course, students are encouraged to pursue formal accreditation. *Prerequisite*: Permission of the Director, Diploma in EIA.

ENVS 506 Seminar in Environmental Earth Science (3 credits)
As understanding of the biogeophysical environment is crucial for informed policy decisions. Current issues in environmental earth science are examined, including earth system interactions, feedback loops, climate change, the carbon cycle, energy and air quality stratospheric ozone, water resources, and life on earth. Public policy as it pertains to these issues is discussed.

ENVS 562 Seminar in Data Collection and Analysis for EIA (3 credits)
Through presentations and seminars, this course focuses on issues and methods in suitable data collection and analysis for impact prediction in the air, surface, groundwater, biological, noise, cultural or socio-economic environments. *Prerequisite*: Permission of the Director, Diploma in EIA.

ENVS 563 Geographical Information Systems for EIA (3 credits)
This course examines the use of Geographical Information Systems (GIS) in Environmental Impact Assessment (EIA), particularly focusing on the role of GIS in the analysis of environmental data and in decision-making processes. Topics covered include data acquisition (e.g. digitizing, integrating data from different sources), multi-criteria decision analysis, fuzzy sets, interpolation techniques and error analysis. The instruction is built around a series of practical exercises mainly using the GIS software. ArcView, but also the raster-based GIS software Idrisi (that students should be familiar with). The differences between raster and vector approaches are stressed throughout the course. The objective of the course is to provide a sound theoretical and practical background in the use of GIS for EIA applications. *Prerequisite:* GEOG 363 or the equivalent.
Note: Students who have received credit or this topic under an ENVS 598 number may not take this course for credit.

ENVS 593 Internship in EIA (3 credits)
The internship is a limited-term placement in either the public or private sector where EIA work is being undertaken. It is intended to maximize the educational experience and bridge the gap between what employers consider necessary job skills and what the university considers essential for a practitioner. *Prerequisite*: Permission of the Director, Diploma in EIA.
Note: The University does not undertake to provide appropriate internships, nor to necessarily accept any placement that a student may have negotiated.

ENVS 594 Internship (3 credits)
This course offers students the opportunity to extend an existing limited-term internship arrangement with an organization or take up a second limited-term internship with a different organization. *Prerequisite:* Permission of the Director, Diploma in EIA.

ENVS 598 Selected Topics in Environmental Impact Assessment (3 credits)
Specific topics for this course will be available from the Director of the Diploma in EIA. *Prerequisite*: Permission of the Director, Diploma in EIA.

BIOL 508 Ecology for Environmentalists (3 credits)
This course discusses the principles of the ecology of individuals, populations, communities and ecosystems and the effects of environmental disturbances ranging from immediate pollution to long-term climate change. *Prerequisite*: Environmental Biology (BIOL 208) or 3 credits selected from BIOL 350, 351, 353, 381 or Permission of the Biology Graduate Program Director.
Note: Students registered in a graduate program in Biology may not take this course for credit.

BIOL 557 Applied Ecology and Conservation Biology (3 credits)
This course applies principles of ecology at the individual, population, community and ecosystem level to identify and solve practical environmental problems. Topics include pollution, climate change, farming, harvesting renewable resources, designing nature's reserves and conserving biodiversity. *Prerequisite*: Permission of the Biology Graduate Program Director.
Note: Students who have received credit for BIOL 457 may not taken this course for credit.

BIOL 601 Readings in Ecology and Behaviour I (3 credits)

CHEM 570 Environmental Biochemistry (3 credits)
This course examines the biochemical effects of environmental stresses on organisms, and adaptations that allow organisms to face stresses. Emphasis is placed on biochemical responses to toxic compounds such as aromatics, halogenated aliphatics, drugs, and heavy metals. Other topics may include adaptations to stresses such as temperature extremes, pathogens, and ionizing radiation. Applications to related biotechnological processes are also considered. *Prerequisite*: CHEM 271, CHEM 375 and BIOL 367 or Permission of the Chemistry and Biochemistry Graduate Program Director.
Note: Students who have taken this course as CHEM 470 or 498P may not take this course for credit.

CIVI 6481 Hazardous Waste Management (4 credits)
Characterization and sources of hazardous waste; toxicological aspects of waste management; legal issues; disposal; storage; physical, chemical and biological treatments; recycling, reuse and exchange; life cycle; environmental impact management in the light of ISO 14000; "Green" product as an environmental choice; lab demonstrations. A case study and a project.

CIVI 6491 Engineering Aspects of Site Remediation (4 credits)
Physico-chemical characteristics of subsurface; soil biology; introduction to subsurface transport of contaminants; site assessment techniques;

bioremediation principles and techniques; physico-chemical remediation; thermal removal; in-situ and ex-situ groundwater techniques; natural attenuation; case studies; lab demonstrations. A project.

CIVI 691 Topics in Civil Engineering I (4 credits)
Note: Subject matter will vary from term to term and from year to year. Students may re-register for these courses, providing that the course content has changed. Changes in content will be indicated by the letter following the course number. e.g. CIVI 691A, CIVI 691B, etc.

ECON 559 Economics for Environmentalists (3 credits)
This course considers one of the most serious problems facing our global civilization: the on-going conflict between economic activity and the bio-physical world upon which all human activity ultimately depends. The course explains the basic theoretical framework most economists use to describe economic activities and the relationship between these activities and the natural world. Understanding the logical apparatus of economics theory shows why market forces and environmental integrity are often in conflict and why economic arguments dominate environmental policy debates at both national and international levels. *Prerequisite:* Permission of the Economics Graduate Program Director.
Note: Students registered in programs in Economics, or programs in the John Molson School of Business, may not take this course for credit.

ECON 591 Advanced Environmental Economics (3 credits)
This course deals with the economics of the management and use of environmental resources. This course focuses primarily on two aspects of environmental issues: 1) the economic rationale of government policies and 2) programs for environmental protection. Case studies will be drawn from taxation, pollution, property rights, emission permits, public goods, conservation, sustainable development, evaluation of environmental damage, and environmental ethics. *Prerequisite*: Permission of the Economics Graduate Program Director.

GEOG 507 Indigenous Resource Management (3 credits)
This course examines the relationship between indigenous peoples and their environment. It focuses on two primary themes; first, it looks at ways in which ecological knowledge shapes indigenous resource management, land tenure, and sea-rights systems; and second, it examines the roles of indigenous peoples and state authorities in land, sea and resource management.

GEOG 570 Environmental Management (3 credits)
This course applies fundamental principles concerning the biophysical environment to the development of strategies and policies for managing the environment. It takes a case study approach to the coastal and fluvial environments. Topics covered include strategies and policies involved in sea

defence, beach protection, integrated coastal zone management, flood alleviation, river stabilization and river restoration schemes.

GEOG 574 Forest Management (3 credits)
This course looks at the changes in the exploitation and management of the forest resource in Canada. Topics include the history of cutting strategies and their effect on species composition; the effects of technological changes in harvesting, transportation and milling on forests; and the evolution of modern forest management philosophies and approaches.

GEOG 630 Environmental Change and Public Policy (3 credits)
The course reviews some means for identifying change in the environment, emphasizing the varied technical, conceptual, and philosophical problems involved and the implications for public policy. Change is discussed as perceived change, normal ecological change, induced or planned change, and accelerated potentially catastrophic change of whatever origin.

GEOG 695 Research Paper

POLI 605 Environmental Law (3 credits)
This course introduces students to environmental law from the viewpoint of the scientific, political and economic issues underlying environmental conflicts pertaining to air and water pollution, toxic substances, solid waste, and hazardous waste disposal. The course provides an overview of issues such as statutory, regulatory and case analysis, liability, natural resource damages, settlement strategies, due diligence and cleanup standards and technologies. Canadian public policy and the role of government as policy-maker/regulator are discussed with comparative legislation, policy and management on the US and international fronts. *Prerequisite*: Permission of the Political Science Graduate Program Director.
Note: Descriptions of other suitable courses may be found in the Graduate Calendar listings for the Departments of Biology, Chemistry & Biochemistry, Geography, Planning and Environment, Political Science and Building, Civil & Environmental Engineering.

POLI 634 Policy Analysis and Program Evaluation
This course focuses upon methods of assessing consequences of public policies. The main purpose of the course is to allow students to survey evaluation research in political science and to present research designs that will enable them to make plausible assumptions about the outcome of governmental programs in the absence of experimental control.
A student may, as a benefit of having successfully completed the Diploma in Environmental Impact Assessment, contemplate pursuing a second undergraduate degree in one of the subject disciplines of the DEIA. If so, please be advised that the course(s) taken in the specific discipline under the DEIA will not be credited to your new course of undergraduate study.

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website: http://artsandscience.concordia.ca/history/

History

Faculty

Distinguished Professors Emeriti: Alan H. Adamson, Donald E. Ginter, Robert Tittler; ***Professors:*** Frederick A. Bode, Ronald Rudin, Martin Singer, Mary Vipond; ***Associate Professors:*** Graham Carr *(Chair)*, Frank R. Chalk, M. Graeme Decarie, Carolyn Fick, Steven High, John L. Hill, Norman Ingram, Shannon McSheffrey *(Graduate Program Director)*, Rosemarie Schade; ***Assistant Professors:*** Andrew Ivaska, Nora Jaffary, Elena Razlogova, Alison Rowley, Gavin Taylor; ***Adjunct Professors:*** Dolores Chew, Matthew Hayday, Edward Osowski, Mary Anne Poutanen, Michael Wasser.

Programs

The Department of History offers programs of study leading to the degrees of Doctor of/Doctorate in Philosophy and Master of/Magisteriate in Arts.

Program Objectives

The Concordia History Department's mission is both to train historians for careers in teaching and research and to produce articulate and informed graduates who share its commitment to serving the broader community.

Our programs attract a stimulating mixture of students who reflect the cultural diversity of Montreal, Quebec, and Canada. In recent years qualified international students from Africa, Asia, Europe, New Zealand and the United States have been drawn to do graduate studies in history at Concordia. Because the M.A. and Ph.D. programs in History enable students to study on a part-time or full-time basis, our student body represents a wide cross-section of individuals, including younger students with recent undergraduate degrees, professionals and other working people who are returning to university from successful careers in the private and public sector. The diversity of our students is a constant reminder that historical scholarship can be enormously enriched by a breadth of background both vocational and geographic.

Faculty Research Interests

The department's expertise covers a broad range of geographic areas and periods. Canadian, European, and American history are strongly represented and the department is distinct from many other programs because of its well-

established and extensive commitment to Non-Western history (India, China, the Middle East, the Caribbean, Africa). The department also has an excellent research profile in a variety of the discipline's sub-fields and genres, including: genocide, anti-semitism, and human rights; race and slavery in the Western hemisphere; colonialism; women's and gender history; urban history; pacifism; cultural history; intellectual history; religious history; and historiography.

Doctor of/Doctorate in Philosophy (History)

Admission Requirements. The normal requirement for admission to the Ph.D. is a Master of/Magisteriate in Arts degree in History, with high standing, from a recognized university. Applicants should understand that admission is contingent on a superior academic record, strong references, and a convincing statement of purpose which clearly describes their professional goals and intended area of research. In addition, admission is contingent on the availability of an appropriate faculty member in the History department to serve as supervisor.

Application Deadlines. The application deadlines for September admission is February 1. The application deadline for January admission is November 1. University and departmental funding competitions (Concordia University Graduate Fellowships, J.W. McConnell Fellowships, International Fee Remissions, the Dagobert Broh Doctoral Entrance Fellowship and History teaching assistantships) take place in the spring only. The application deadline for these competitions is December 15.

Requirements for the Degree

1. **Credits.** A fully-qualified candidate entering the program with a master's or magisteriate degree is required to complete a minimum of 90 credits.

2. **Residence.** The minimum period of residence is 6 terms (including summer terms) of full-time graduate study beyond the master's or magisteriate degree, or 9 terms of full-time graduate study beyond the bachelor's degree for those students who are permitted to enroll for doctoral studies without a master's or magisteriate degree, or the equivalent in part-time study.

3. **Courses.** (12 credits). Doctoral students are required to take 12 credits of 800-level courses, six of which must be tutorials in their major area. The additional six credits are normally chosen from the department's seminars. In exceptional cases, students may, with permission of the Graduate Program Director, do three credits of course work at an equivalent level in another discipline.

4. **Comprehensive Examinations.** (12 credits). During their first year in the program, and in consultation with the GPD, new Ph.D. students will form an advisory committee of three faculty members to assist in the selection and preparation of comprehensive fields. After students have completed the four required doctoral courses they will begin to prepare for the comprehensives under the supervision of their three field supervisors.

   The major field will be that in which the student's proposed doctoral thesis falls. Normally two of the fields chosen will be from the same historical/geographical area. Although most fields are defined by the department as the history of a specific geographical region between designated dates, many thematic fields are also available. Any student may offer one examination in a related discipline when approved by the History Graduate Committee and by the appropriate faculty member and/or program administrator in that discipline.

   The preparation of a comprehensive field should give students sufficient background to teach at an introductory level and/or do advanced research in the field. Although the requirements may vary from one field to the next, a core reading list of 50 to 100 titles per field is suggested as reasonable. The reading list for a field will be drawn up by the professor in consultation with the student, and once established, both must agree to any significant changes.

   The examinations will normally be scheduled in the fifth term (or spring of the second year) of the student's program. The comprehensives will consist of take-home examinations in three selected fields, each to be completed over a 72 hour period. These written examinations (which will be done on a word processor) will normally be completed within a three-week period. If successful they will be followed by an oral examination, involving all three examiners, to be held within two weeks of the last written comprehensive. The purpose of the oral comprehensive is to allow the doctoral student the opportunity to explain or expand on parts of the written examinations which professors found inadequate or unclear, as well as to allow for more general discussion among the examiners and the student as a group of historians.

5. **Comprehensive Fields.** Subject to the availability of appropriate faculty members, the History department is normally prepared to supervise comprehensive examinations in the following fields:

   Europe. England, 500-1485; Britain, 1485-1837; Renaissance and Reformation; France since 1789; 20th century Germany; Russia, 1700 to present.

   Canada. Colonial and Native History; 1840 to 1896; 1896 to present; French Canada to 1867; Modern Quebec to present.

United States. Colonial and Native History; 19th century; 20th century; U.S. foreign relations.

Africa since 1800. Selected topics.

Asia since 1750. China; India; Middle East; selected topics in Southeast Asia.

Latin America since 1500. Selected topics.

Caribbean. 17th to 19th centuries.

Comparative or Thematic History. Students may develop, in consultation with their major advisor and with the approval of the History Graduate Committee, comparative or thematic fields for their comprehensive examinations. These fields shall be limited to the historical areas where the departmental resources are available. Some examples include: Gender and Women's History; Genocide and Human Rights; Urban History; and International Relations.

6. **Ph.D. Thesis Proposal and Colloquium.** HIST 885: Ph.D. Thesis Proposal and Colloquium (6 credits). Following the successful completion of the comprehensive exams, students will prepare a written thesis proposal for the approval of the internal members of their thesis committee. The thesis proposal should describe and justify the intended topic, explain its place in the historiography of the field, discuss the intended research methods, and identify the source requirements including their availability. When the written proposal is approved the student will present an oral colloquium about the proposal to the Department. When the proposal and colloquium requirements have been satisfied the student will be admitted to candidacy.

7. **Thesis.** HIST 890: Thesis Research (60 credits). Doctoral students must submit a thesis based on their research and defend it in an oral examination. A doctoral thesis in history is expected to be based on extensive research in primary sources, to make an original contribution to historical knowledge, and to be presented in an acceptable literary form. The Ph.D. thesis should normally run to no more than 400 pages including all critical apparatuses.

8. **Language.** Doctoral candidates are required to demonstrate their ability to read and translate historical material in one modern language other than English. In addition, students may elect, or may be required, to demonstrate competence in a second language. Language examinations, which are normally given twice a year, are administered by the department. Dictionaries are not allowed in writing the exam.

9. **Time Limits.** All work for a doctoral degree must be completed within 18 terms (6 years) of full-time study or 24 terms (8 years) of part-time study from the time of initial registration in the program.

Master of/Magisteriate in Arts (History)

Students may obtain a Master of/Magisteriate in Arts (History) under one of two options: Option A with an Original Essay; and Option B with a Thesis. Option A provides broader training through additional course work while Option B includes a more extensive project of original research. Both options are of generally recognized value for students intending to pursue doctoral study.

Admission Requirements. The normal requirement for admission into the M.A. is an honors degree in history or its equivalent. Applicants should understand that admission is contingent on a sound undergraduate academic record, strong letters of reference, and a convincing statement of purpose which clearly describes their academic interest in the program and intended area of research. In addition, admission is contingent on the availability of an appropriate faculty member in the History department to serve as supervisor. Some applicants with deficiencies in their undergraduate preparation may be admitted into a Qualifying Year program.

Application Deadlines. The application deadlines for September admission is February 1. The application deadline for January admission is November 1. University and departmental funding competitions (Concordia University Graduate Fellowships, J.W. McConnell Fellowships, International Fee Remissions, and History teaching assistantships) take place in the spring only. The application deadline for these competitions is December 15.

Requirements for the Degree

1. **Credits.** A fully-qualified candidate is required to complete a minimum of 45 credits. The allocations of credits for Options A and B are specified below.

2. **Residence.** The minimum residence requirement is one year (3 terms) of full time study, or the equivalent in part-time study.

3. **Language.** All M.A. students must demonstrate their ability to read and translate historical material in an acceptable language other than English. Language examinations, which are normally given twice a year, are administered by the department.

4. **Time Limits.** All work for a master's/magisteriate degree for full-time students must be completed within 12 terms (4 years) from the time of initial

registration in the program at Concordia University; for part-time students the time limit is 15 terms (5 years).

Master of/Magisteriate in Arts with an Original Essay (Option A)

1. **Courses.** (18 credits). All students in Option A are required to complete 18 credits of courses at the 600 level, including HIST 600: Historical Theories and Methods (3 credits) and HIST 605: Introduction to the Original Essay (3 credits). In addition, all students must do 6 credits of courses in one field and a minimum of 3 credits in a second field. In exceptional cases students may, with the permission of the GPD, do 3 credits of course work at an equivalent level in another discipline.

2. **Original Research Essay.** (27 credits). All students in Option A must write an Original Research Essay, HIST 680. Under faculty supervision, students will write an essay of approximately 40 pages in length that is based on primary research.

Master of/Magisteriate in Arts with a Thesis (Option B)

1. **Courses.** (12 credits). All students in Option B must take 12 credits of 600 level courses including HIST 600: Historical Theories and Methods (3 credits). In addition, students must do 6 credits of courses in their major field and 3 credits in a second field. In exceptional cases students may, with permission of the GPD, do 3 credits of course work at an equivalent level in another discipline.

2. **Thesis.** HIST 685: M.A. Thesis (33 credits). The thesis is a work of primary research that normally runs to no more than 100 pages. Prepared under the supervision of one or more faculty it must be defended orally before a committee of three History faculty including the supervisor.

Courses

All graduate courses are one-term courses. Courses numbered 600 are taken at the master's level and valued at 3 credits. Courses numbered 800 are taken at the Ph.D. level and valued at 3 credits. Additional work is required of doctoral students. The content of these courses varies from term to term. Students should consult the department for more detailed information.

HIST 600 Historical Theories and Methods (3 credits)
This course examines the history of the discipline and the nature of historical knowledge, as well as contemporary debates about the meaning and practice of history. The content varies from term to term depending on the instructor(s). The material covered may include the following: research tools (e.g. library resources, the archives and the Internet), major approaches to history (e.g.

Marxist, Annaliste, feminist), the debate about objectivity and truth in history, public history (history in film, television, schools, museums), and the impact of postmodernism on historical practice.

HIST 605 Introduction to the Original Research Essay (3 credits)
This course is required for all M.A. students in Option A and will be given as a tutorial by the faculty member who will supervise the Original Research Essay. The purpose of the course is to review the secondary literature that is relevant to the student's proposed area of research and to develop a formal research proposal.

European History

HIST 610/810 Selected Topics in European History (3 credits)

HIST 819 Tutorial in European History (3 credits)

Students in these courses may be required to have a reading knowledge of a language other than English as specified by the instructor(s).

Canadian History

HIST 620/820 Selected Topics in Canadian History (3 credits)

HIST 829 Tutorial in Canadian History (3 credits)

Students in these courses may be required to have a reading knowledge of both French and English.

United States History

HIST 630/830 Selected Topics in US History (3 credits)

HIST 839 Tutorial in US History (3 credits)

Non-Western History

HIST 640/840 Selected Topics in Non-Western History (3 credits)

HIST 849 Tutorial in Non-Western History (3 credits)

Genocide History

HIST 650/850 Selected Topics in the History of Genocide (3 credits)

HIST 859 Tutorial in Genocide History (3 credits)

Gender History

HIST 660/860 Selected Topics in the History of Gender (3 credits)

HIST 869 Tutorial in Gender History (3 credits)

Selected Areas of History

HIST 670/870 Selected Topics in History (3 credits)

HIST 679/879 Tutorial in a Selected Area of History (3 credits)

Research, Theses, and Comprehensive Examinations

HIST 680 M.A. Original Research Essay (27 credits)
HIST 685 M.A. Thesis (33 credits)
HIST 880 Comprehensive Examinations (12 credits)
HIST 885 Ph.D. Thesis Proposal and Colloquium (6 credits)
HIST 890 Thesis Research (60 credits)

CJ 3.245
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Journalism

Faculty

Professor: Enn Raudsepp *(Director);* ***Associate Professors:*** Mike Gasher, Ross Perigoe; ***Assistant Professor:*** Linda Kay, Brian Gabrial; ***Lecturer:*** Peter Downie *(Diploma Program Director).*

Programs

The Department of Journalism offers a Diploma in Journalism.

Program Objectives

The Diploma in Journalism is designed to prepare graduate students for careers in the field of journalism.

Diploma in Journalism

Admission Requirements. Entry into the program requires a bachelor's degree or equivalent in a field other than journalism from a recognized university. However, students who have graduated with a Journalism degree in a language other than English may also be considered. Applicants are required to submit a letter of intent together with the application which should be about 600 words outlining the student's background, academic and work experience, and aspirations in journalism. Applicants must pass an English test administered by the department, or submit results of a Test of English as Foreign Language *(TOEFL)*. Where possible, applicants will be interviewed. Students should be aware that written assignments in workshops are in English. Although it will not determine acceptance, applicants are advised that a working knowledge of French is important. Normally the program will be taken full-time and completed in one year (3 terms).

Application Deadline. A detailed description of the program may be obtained on the department's website: http://artsandscience.concordia.ca/journalism. Applicants should apply online at: http://welcome.concordia.ca/. The deadline for applications is December 15 (for international students) and January 15 (for Canadian students).

Requirements for the Diploma

1. **Credits.** A fully-qualified candidate is required to complete a minimum of 33 credits.

2. **Courses.** All students are required to complete 33 credits in the following sequence:

   Summer Term (9 credits)

   JOUR 502 Introduction to the Print Process
   JOUR 511 Introduction to Broadcasting
   JOUR 519 Computer Assisted Reporting

   Fall Term (12 credits)

   JOUR 500 Perspectives on Contemporary Media
   JOUR 504 News Reporting and Writing
   JOUR 509 Copy Editing and Layout
   JOUR 530 Advanced Radio News

   Winter Term (12 credits)

   JOUR 513 Journalism Ethics and the Law
   JOUR 536 Advanced Television Workshop

   And two of the following courses:

   JOUR 505 Advanced Print Workshop
   JOUR 508 Research Project
   JOUR 520 Directed Study
   JOUR 528 On-line Magazine
   JOUR 532 Public Affairs Workshop in Broadcast Journalism
   JOUR 533 Workshop in Business Communications
   JOUR 542 Seminar in International Journalism

Academic Regulations

1. **GPA Requirement.** Students having completed at least four courses are assessed at the end of each academic year based on creditable courses completed after their first registration in the program. To be permitted to continue, students must have obtained a cumulative grade point average of at least 2.70.

2. **C Rule.** Normally, a student receiving a grade of *C* in two courses will be required to withdraw from the program. Students withdrawing for this reason may petition the Diploma Committee for special consideration. In cases of extenuating circumstances probationary continuation in the program will be considered.

3. **F Rule.** Students who receive a failing grade in the course of their studies will be withdrawn from the program. Students may apply for re-admission. Students who receive another failing grade after re-admission will be withdrawn from the program.

4. **Time Limit.** All work for a diploma program must be completed within 6 terms (2 years) from the time of initial registration in the program for full-time students; for part-time students the time limit is 12 terms (4 years).

5. **Graduation Requirement.** To graduate, students must have completed all course requirements with a cumulative grade point average of at least 2.70.

Courses

JOUR 500 Perspectives on Contemporary Media (3 credits)
The course will examine the complex structures of modern media and how they have evolved. It will focus on media theory and the organization, practices and problems of media enterprises, and their impact on audiences and on society. The effects of technology, ownership and regulation will be discussed within the framework of an examination of public access and media accountability.

JOUR 502 Introduction to the Print Process (3 credits)
This is a comprehensive lecture/laboratory course which lays the foundations for the writing and reporting demands of journalism. Students are introduced to the salient features of print formats, and receive assignments in information-gathering and writing both in class and in the field.

JOUR 504 News Reporting and Writing (3 credits)
This course is intended to consolidate the writing skills learned during the summer. Through lectures and laboratory work, students learn a variety of information-gathering and writing techniques, including short deadline news reporting and feature writing. *Prerequisite:* JOUR 502.

JOUR 505 Advanced Print Workshop (3 credits)
This workshop offers students the opportunity to perfect their skills in a variety of print formats, ranging from beat reporting to magazine writing.

JOUR 508 Research Project (3 credits)
The project is to be a comprehensive study and report on some area of modern media practice, or on the interaction of media and society. The subject and method must be approved in advance by the instructor of the course.

JOUR 509 Copy Editing and Layout (3 credits)
This course offers lectures and workshops in the art of copy editing, as well as an introduction to computerized layout and newspaper production. *Prerequisite:* JOUR 504.

JOUR 511 Introduction to Broadcasting (3 credits)
This course is an introduction to the production of radio and television news programs and public affairs documentaries. Students learn writing techniques, interviewing style and production processes.

JOUR 513 Journalism Ethics and the Law (3 credits)
The course examines the journalist's responsibility in terms of both ethics and the law. It introduces students to a representative cross-section of ethical theories and codes and takes an intensive look at the most common legal issues affecting the practice of journalism.

JOUR 519 Computer-Assisted Reporting (3 credit)
Students learn the basics of desktop publishing and computer-assisted reporting, working with a variety of software and data storage systems to research, analyze and publish their work. The goal is to equip students with the skills necessary to be successful journalists in the information age.
Note: Students who have received credit for this topic under a JOUR 525 number may not take this course for credit.

JOUR 520 Directed Study (3 credits)
A student may be allowed to undertake a study of a particular field or topic relating to journalism or the news media, with written permission of the diploma program director. A detailed outline of the proposed study, and approval of a satisfactory study supervisor, is required.

JOUR 525 Special Topics in Journalism (3 credits)
When offered, content will depend on the theme designated by the program.

JOUR 526 Special Topics in Journalism (3 credits)
Students who have received credit for JOUR 525 may register for JOUR 526, provided content is different.

JOUR 528 On-Line Magazine (3 credits)
This course introduces students to the theory and practice of on-line publication and broadcast methods.
Note: Students who have received credit for this topic under a JOUR 525 number may not take this course for credit.

JOUR 530 Advanced Radio News (3 credits)
This is a workshop course in which students function as reporters, writers, news readers and editors in order to learn the skills necessary to produce daily newscasts.

JOUR 532 Public Affairs Workshop in Broadcast Journalism (3 credits)
This workshop allows students to perfect their skills in long format public affairs broadcasting in either radio or television. Working under the

supervision of the instructor, students prepare a number of "magazine" pieces suitable for broadcast.

JOUR 533 Workshop in Business Communications (3 credits)
This course introduces students to the array of writing needed in a variety of business settings, including technical writing, annual reports and speech writing.
Note: Students who have received credit for this topic under a JOUR 525 number may not take this course for credit.

JOUR 536 Advanced Television Workshop (3 credits)
This course gives students the opportunity to perfect their skills in writing for television and producing news and public affairs programming.

JOUR 542 International Journalism (3 credits)
This course examines the way journalism is practiced in a selected country or tradition. The focus of the course may change from year to year.

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Mathematics and Statistics

Faculty

Professor Emeritus: Zohel Khalil, Tariq N. Srivastava; ***Professors:*** Syed T. Ali, Abraham Boyarsky, William P. Byers, Yogendra Chaubey *(Chair)*, Mariana Frank, José Garrido, Pawel Gora *(Graduate Program Director)*, Richard L. Hall, John Harnad, Joel Hillel *(Graduate Program Director, M.T.M.)*, Hershy Kisilevsky, John McKay, Harald W. Proppe *(Associate Chair)*, Robert Raphael, Alexander Shnirelman, Anna Sierpinska, Ronald J. Stern, Manfred E. Szabo, Francisco Thaine; ***Associate Professors:*** Josef Brody, G. Elie Cohen, Chris Cummins, Galia Dafni, Chantal David, James C. Hayes, Adrian Iovita, Attila Keviczky, Dimitri Korotkin; ***Assistant Professors:*** Marco Bertola, Patrice Gaillardetz, Arusharka Sen, Wei Sun, Xiaowen Zhou; ***Adjunct Professors:*** Srinath Baba, John Denton, Henry H. Hung, Benoit Larose, Alexander Melnikov.

Programs

The Department of Mathematics and Statistics offers programs of study leading to the degrees of Doctor of/Doctorate in Mathematics, Master of/Magisteriate in Science and Master of/Magisteriate in Arts in Mathematics, and Master of/Magisteriate in the Teaching of Mathematics.

Program Objectives

Doctor of/Doctorate in Philosophy. The principal aim of the Ph.D. program is to enable students to attain levels of mastery in one of the Department's four areas of specialization, commensurate with carrying on independent mathematical research at a high level. The areas are: dynamical systems, mathematical physics-differential geometry, number theory-computational algebra, and statistics-actuarial mathematics. Most students in the doctoral program are fully supported by means of fellowships or teaching and research assistantships.

In addition to the courses offered at Concordia University, students can take advantage of the Institut des sciences mathématiques (ISM), an organization which facilitates students taking courses at any of its other five-member universities: McGill University, Université de Montréal, Université du Québec à Montréal, Université de Sherbrooke, and Université Laval.

Master of/Magisteriate in Science/Arts. The goal of the M.A./M.Sc. program is to provide students with basic knowledge sufficient for undertaking doctoral study, as well as applying mathematical expertise in industry should doctoral studies not be pursued. Students generally follow a program tailored to their individual needs and interests, with either a thesis or a project option, and many receive financial support through fellowships or teaching and research assistantships. Master's students may also avail themselves of the ISM.

Master of/Magisteriate in the Teaching of Mathematics. The aim of the Master/ Magisteriate in the Teaching of Mathematics program is to improve the teaching of mathematics at pre-university levels by increasing the professionalism of teachers. To achieve these aims, teachers are: 1. exposed to more advanced mathematics taught by professional mathematicians, 2. stimulated to reflect on and critically evaluate general and specific aspects of mathematical pedagogy, and 3. introduced to current theories, research methods and research results in mathematics education.

Faculty Research Interests

Mathematics. The Department has research teams in four main areas: (1) in number theory-computational algebra, current work is centred around Iwasawa theory, algebraic number fields, p-adic L-functions, the Artin L-series and arithmetic associated with algebro-geometric objects, and the connection between modular functions and the finite simple groups; (2) in mathematical physics-differential geometry, present research deals with integrable Hamiltonian systems and coherent non-linear wave phenomena, classical and quantum gauge theory, quantization techniques, square integrable group representation and spectral analysis in quantum physics; (3) in dynamical systems, current research topics include ergodic theory and absolutely continuous invariant measures, the interplay between ergodic theory and topological analysis, computer modelling, small stochastic perturbations, scientific computing and linear algebraic methods, nonsmooth analysis and control theory; (4) in statistics-actuarial mathematics, areas of concentration are statistical inference in linear models, inference and modelling data, the estimation of variance components, sampling and distribution theory, efficient techniques in network reliability, as well as models in risk theory and actuarial statistics; and (5) in analysis-partial differential equations-applied mathematics, areas of specialization are harmonic analysis on Euclidean space, in particular the theory of singular integral operators, Hardy spaces, and other function spaces; applications of harmonic analysis to partial differential equations; and harmonic analysis on the Heisenberg group and on domains in several complex variables. The Department has contacts with the international mathematics research community, and is a member of the ISM. Regular seminars are held and visitors are in residence at various times.

Mathematics Education. All the faculty members closely associated with the Master in the Teaching of Mathematics program are active in research. Past and on-going research projects include studies of problem solving processes, the development of models of mathematical understanding, detailed observational studies of the mathematical thinking of students using computer algebra systems and of linear-algebraic thinking, and the development of a computational approach to the teaching of functions.

Doctor of/Doctorate in Philosophy (Mathematics)

Admission Requirements. Candidates will be selected on the basis of their past academic record, letters of recommendation and the relevance of the proposed area of research to the areas of specialization of the Department. The normal requirement for admission to the program is a M.Sc. degree, with high standing in Mathematics or an allied discipline from a recognized university. Exceptional candidates who have successfully completed one-year's study at the Master's level may, upon approval by the Graduate Studies Committee, be exempted from the required completion of the Master's degree and admitted directly into the Ph.D. program.

Application Deadlines. The deadline for completed applications is February 1 for the Fall term. The deadline is December 15 for students wishing to apply for the Concordia Fellowship/International Fee Remission.

Requirements for the Degree

1. **Credits.** Students must complete a program of 90 credits, consisting of the following components:
   a. Comprehensive examinations (12 credits);
   b. Six courses or seminars (18 credits);
   c. Thesis (60 credits).

2. **Academic Standing.** The 18 credits associated with seminar and course work must be completed with a grade point average of at least 3.00. The specific program of courses and seminars, chosen from the list, will be determined by the Graduate Studies Committee in consultation with the student's Advisory Committee.

3. **Residence.** The minimum period of residence is two years of full-time graduate study, beyond the M.A./M.Sc., or the equivalent in part-time study. (A minimum of one year of full-time study is normally expected).

4. **Comprehensive Examination.** The comprehensive examination is composed of the following two parts:

Part A (6 credits)
This is a written examination, consisting of two parts. It will normally be completed within one year (3 terms) of the candidate's entry into the program or the equivalent of part-time study. Candidates are allowed at most one failure in the Part A examination. The first part of the Comprehensive A examination is to test the candidate's general knowledge of fundamental mathematical concepts. The second part of the Comprehensive A examination tests the candidate's knowledge of topics in his or her area of specialization. The material will be chosen from the list of course descriptions given by the Graduate Studies Committee in consultation with the candidate's research supervisor and the student's Advisory Committee.

Part B (6 credits)
The Comprehensive B examination is an oral presentation of the candidate's plan of his or her doctoral thesis in front of the student's Advisory Committee. It is normally taken within two years (6 terms) of the candidate's entry into the program or the equivalent of part-time study.

5. **Thesis**. Concurrently with the preparation for the Part B exam, the students will be engaging in their research work towards the dissertation. After submitting the doctoral thesis, the candidate is required to pass an oral defence of the thesis. The doctoral thesis must make an original contribution to mathematical knowledge, at a level suitable for publication in a reputable professional journal in the relevant area.

6. **Average Time to Completion.** Normally a student completes all requirements for the degree, except for the thesis, within two years of entering the program. The normal period for completion of the program, for a student already holding the equivalent of an M.A./M.Sc. degree, is three to four years.

Note: Students who were admitted to the Ph.D. in Mathematics program prior to 1999-2000 must choose from among courses listed below for completion of their program. **Students who have received credit for these courses are excluded from receiving credit for the equivalent MAST courses.** For a full description of these courses, please consult the 1998-99 graduate calendar. All courses are worth 4 credits unless otherwise stated.

MATH 830 Cyclotomic Fields
MATH 831 Class Field Theory
MATH 832 Elliptic Curves
MATH 833 Selected Topics in Number Theory
MATH 834 Selected Topics in Computational Algebra
MATH 840 Lie Groups
MATH 841 Partial Differential Equations
MATH 851 Differential Geometric Methods in Physics

MATH 852 **Algebro-Geometric Methods in Physics**
MATH 853 **Gauge Theory and Relativity**
MATH 854 **Quantization Methods**
MATH 855 **Spectral Geometry**
MATH 856 **Selected Topics in Mathematical Physics**
MATH 857 **Selected Topics in Differential Geometry**
MATH 858 **Seminar in Mathematical Physics**
MATH 859 **Seminar in Differential Geometry**
MATH 860 **Differential Dynamical Systems**
MATH 861 **Absolutely Continuous Invariant Measures**
MATH 862 **Numerical Analysis of Nonlinear Problems**
MATH 863 **Bifurcation Theory of Vector Fields**
MATH 865 **Selected Topics in Dynamical Systems**
MATH 868 **Seminar in Dynamical Systems**
MATH 871 **Advanced Probability Theory**
MATH 872 **Stochastic Processes**
MATH 873 **Advanced Statistical Inference**
MATH 874 **Advanced Multivariate Inference**
MATH 875 **Advanced Sampling**
MATH 876 **Survival Analysis**
MATH 877 **Reliability Theory**
MATH 878 **Risk Theory**
MATH 881 **Selected Topics in Probability, Statistics and Actuarial Mathematics**
MATH 889 **Seminar in Probability, Statistics and Actuarial Mathematics**
MATH 890 **Comprehensive Examination A** (5 credits)
MATH 891 **Comprehensive Examination B** (5 credits)
MATH 892 **Thesis** (56 credits)
MATH 898 **Seminar in Number Theory**
MATH 899 **Seminar in Computational Algebra**

Academic Regulations

1. **GPA Requirement.** The 18 course and seminar credits must be completed with a grade point average of at least 3.00. The specific program of courses and seminars, chosen from the list, will be determined by the Graduate Studies Committee in consultation with the student's Advisory Committee.

2. **C Rule.** Students who receive more than one C grade during the course of their Ph.D. studies will be required to withdraw from the program. Students may appeal for readmission. Students who receive another C after readmission will be required to withdraw from the program and will not be considered for readmission.

3. **F Rule.** Students who receive a failing grade in the course of their Ph.D. studies will be withdrawn from the program. Students may apply for readmission. Students who receive another failing grade after readmission will be withdrawn from the program.

4. **Time Limit.** Normally a student completes all requirements for the degree except for the thesis within two years of entering the program. The normal period for completion of the program, for a student already holding the equivalent of a master's degree, is three to four years.

5. **Graduation Requirement.** In order to graduate, students must have a cumulative GPA of 3.00.

Elective Courses

Number Theory and Computational Algebra

MAST 830 Cyclotomic Fields (3 credits)
L-series, Dirichlet theorem, Gauss sums, Stickelberger theorem, class groups and class number, circular units, analytic formulae.

MAST 831 Class Field Theory (3 credits)
Local and global class field theory, ideles and adeles, reciprocity laws, existence theorem.

MAST 832 Elliptic Curves (3 credits)
Introduction to elliptic curves over finite fields, local and global fields, rational points, Mordell-Weil theorem, formal groups.

MAST 833 Selected Topics in Number Theory (3 credits)

MAST 834 Selected Topics in Computational Algebra (3 credits)

MAST 837 Selected Topics in Analysis (3 credits)

MAST 838 Selected Topics in Pure Mathematics (3 credits)

Mathematical Physics and Differential Geometry

MAST 840 Lie Groups (3 credits)
The mathematical theory of Lie groups and introduction to their representation theory with applications to mathematical physics. Topics will include classical Lie groups, one-parameter subgroups, Lie algebras and the exponential mapping, adjoint and coadjoint representations, roots and weights, the Killing form, semi-direct products, Haar measure and decompositions such as those of Cartan and Iwasawa. The theory of unitary representations on Hilbert spaces.

Physical applications of compact Lie groups (such as SU(2) and SU(3)) and non-compact groups (such as the Lorentz and Poincaré groups).

MAST 841 Partial Differential Equations (P.D.E.'s) (3 credits)
Introduction to the mathematical theory of P.D.E.'s, including applications to mathematical physics. Topics will include Sturm-Liouville systems, boundary value and eigenvalue problems, Green's functions for time-independent and time-dependent equations, Laplace and Fourier transform methods. Additional topics will be selected from the theory of elliptic equations (e.g. Laplace and Poisson equations), hyperbolic equations (e.g., the Cauchy problem for the wave equation) and parabolic equations (e.g., the Cauchy problem for the heat equation). Links will be made with the theory of differential operators and with analysis on manifolds.

MAST 851 Differential Geometric Methods in Physics (3 credits)
Manifolds, differential systems, Riemannian, Kahlerian and symplectic geometry, bundles, supermanifolds with applications to relativity, quantization, gauge field theory and Hamiltonian systems.

MAST 852 Algebro-Geometric Methods in Physics (3 credits)
Algebraic curves, Jacobi varieties, theta functions, moduli spaces of holomorphic bundles and algebraic curves, rational maps, sheaves and cohomology with applications to gauge theory, relativity and integrable systems.

MAST 853 Gauge Theory and Relativity (3 credits)
Yang-Mills theory, connections of fibre bundles, spinors, twistors, classical solutions, invariance groups, instantons, monopoles, topological invariants, Einstein equations, equations of motion, Kaluza-Klein, cosmological models, gravitational singularities.

MAST 854 Quantization Methods (3 credits)
Geometric quantization, Borel quantization, Mackey quantization, stochastic and phase space quantization, the problems of prequantization and polarization, deformation theory, dequantization.

MAST 855 Spectral Geometry
Schrödinger operators; min-max characterization of eigenvalues, geometry of the spectrum in parameter space, kinetic potentials, spectral approximation theory, linear combinations and smooth transformations of potentials, applications to the N-body problem.

MAST 856 Selected Topics in Mathematical Physics (3 credits)

MAST 857 Selected Topics in Differential Geometry (3 credits)

Dynamical Systems

MAST 860 Differentiable Dynamical Systems (3 credits)
The study of dynamical properties of diffeomorphisms or of one-parameter groups of diffeomorphisms (flows) defined on differentiable manifolds. Periodic points, the non-wandering set, and more general invariant sets. Smale's horseshoe, Anosov, and Morse-Smale systems, general hyperbolic systems, the stable manifold theorem, various forms of stability, Markov partitions and symbolic dynamics.

MAST 861 Absolutely Continuous Invariant Measures (3 credits)
Review of functional analysis, Frobenius-Perron operator and its properties, existence of absolutely continuous invariant measures for piecewise expanding transformations, properties of invariant densities, compactness of invariant densities, spectral decomposition of the Frobenius-Perron operator, bounds on the number of absolutely continuous invariant measures, perturbations of absolutely continuous invariant measures.

MAST 862 Numerical Analysis of Nonlinear Problems (3 credits)
Continuation of solutions, homotopy methods, asymptotic stability, bifurcations, branch switching, limit points and higher order singularities, Hopf bifurcation, control of nonlinear phenomena, ODE with boundary and integral constraints, discretization, numerical stability and multiplicity, periodic solutions, Floquet multipliers, period doubling, tori, control of Hopf bifurcation and periodic solutions, travelling waves, rotations, bifurcation phenomena in partial differential equations, degenerate systems.

MAST 863 Bifurcation Theory of Vector Fields (3 credits)
Local and global bifurcations. Generalized Hopf bifurcation and generalized homoclinic bifurcation. Hamiltonian systems and systems close to Hamiltonian systems, local codimension two bifurcations of flows.

MAST 865 Selected Topics in Dynamical Systems (3 credits)

Statistics and Actuarial Mathematics

MAST 871 Advanced Probability Theory (3 credits)
Definition of probability spaces, review of convergence concepts, conditioning and the Markov property, introduction to stochastic processes and martingales.

MAST 872 Stochastic Processes (3 credits)
Stochastic sequences, martingales and semi-martingales, Gaussian processes, processes with independent increments, Markov processes, limit theorems for stochastic processes.

MAST 873 Advanced Statistical Inference (3 credits)
Decision functions, randomization, optimal decision rules, the form of Bayes' rule for estimation problems, admissibility and completeness, minimax, rules, invariant statistical decisions, admissible and minimax decision rules, uniformly most powerful tests, unbiased tests, locally best tests, general linear hypothesis, multiple decision problems.

MAST 874 Advanced Multivariate Inference (3 credits)
Wishart distribution, analysis of dispersion , tests of linear hypotheses, Rao's test for additional information, test for dimensionality, principal component analysis, discriminant analysis, Mahalanobis distance, cluster analysis, relations with sets of variates.

MAST 875 Advanced Sampling (3 credits)
Unequal probability sampling, multistage sampling, super population models, Bayes and empirical Bayes estimation, estimation of variance from complex surveys, non-response errors and multivariate auxiliary information.

MAST 876 Survival Analysis (3 credits)
Failure time models, inference in parametric models, proportional hazards, non-parametric inference, multivariate failure time data, competing risks.

MAST 877 Reliability Theory (3 credits)
Reliability performance measures, unrepairable systems, repairable systems, load-strength reliability models, distributions with monotone failure rates, analysis of performance effectiveness, optimal redundancy, heuristic methods in reliability.

MAST 878 Advanced Risk Theory (3 credits)
Generalizations of the classical risk model, renewal processes, Cox processes, diffusion models, ruin theory and optimal surplus control.

MAST 881 Selected Topics in Probability, Statistics and Actuarial Mathematics (3 credits)

Seminars

MAST 858 Seminar in Mathematical Physics (3 credits)
MAST 859 Seminar in Differential Geometry (3 credits)
MAST 868 Seminar in Dynamical Systems (3 credits)
MAST 889 Seminar in Probability, Statistics and Actuarial Mathematics (3 credits)
MAST 898 Seminar in Number Theory (3 credits)
MAST 899 Seminar in Computational Algebra (3 credits)

Thesis and Comprehensive Examinations

MAST 890 **Comprehensive Examination A** (6 credits)
MAST 891 **Comprehensive Examination B** (6 credits)
MAST 892 **Doctoral Thesis** (60 credits)

Master of/Magisteriate in Science/Arts (Mathematics)

Admission Requirements. Applicants must have a Bachelor's degree with Honours in Mathematics, or equivalent. Qualified applicants requiring prerequisite courses may be required to take up to 12 undergraduate credits in addition to and as a part of the regular graduate program. Promising candidates who lack the equivalent of an Honours degree in Mathematics may be admitted after having completed a qualifying program.

Application Deadlines. The deadline for completed applications is February 1 for the Fall term. The deadline is December 15 for students wishing to apply for the Concordia Fellowship/International Fee Remission.

Financial Aid. Full-time graduate students enrolled in the M.A./M.Sc. program may receive financial assistance in the form of a teaching or research assistantship, a university fellowship, or a fellowship from an outside source. Most applications for financial assistance are processed through the Graduate Program Director. The deadline for completed applications for university fellowships is December 15th.

Requirements for the Degree

1. **Credits.** A candidate is required to complete a minimum of 45 credits.

2. **Residence.** The minimum residence requirement is one year (3 terms) of full-time study, or the equivalent in part-time study.

3. **Courses.** Students may enter one of the two options below. The choice of the option, the selection of the courses and the topic of the thesis, must be approved by the Graduate Program Director.

4. **Course Load.** A full-time student will take at least two courses during the first term. A part-time student will normally take one course during the first term. The course load during subsequent terms will be determined by the Graduate Program Director, in consultation with the student.

Note: Students who were admitted to M.A./M.Sc. in Mathematics program prior to 1999-2000 must choose from among the courses listed below for completion of their program. **Students who have received credit for these courses are excluded from receiving credit for the equivalent MAST courses.** For

a full description of these courses, please consult 1998-99 graduate calendar. A11 courses are worth 4 credits unless otherwise stated.

MATH 650 **Development of Mathematical Ideas** (8 credits)
MATH 655 **Topology**
MATH 656 **Differential Geometry**
MATH 657 **Manifolds**
MATH 658 **Lie Groups**
MATH 661 **Topics in Analysis**
MATH 662 **Functional Analysis I**
MATH 663 **Introduction to Ergodic Theory**
MATH 664 **Dynamical Systems**
MATH 665 **Complex Analysis**
MATH 666 **Differential Equations**
MATH 667 **Reading Course in Analysis**
MATH 668 **Transform Calculus**
MATH 669 **Measure Theory**
MATH 670 **Mathematical Methods in Statistics**
MATH 671 **Probability Theory**
MATH 672 **Statistical Inference I**
MATH 673 **Statistical Inference II**
MATH 674 **Multivariate Analysis**
MATH 675 **Sample Surveys**
MATH 676 **Linear Models**
MATH 677 **Time Series**
MATH 678 **Statistical Consulting and Data Analysis**
MATH 679 **Topics in Statistics and Probability**
MATH 680 **Topics in Applied Mathematics**
MATH 681 **Optimization**
MATH 682 **Matrix Analysis**
MATH 683 **Numerical Analysis**
MATH 684 **Quantum Mechanics**
MATH 685 **Approximation Theory**
MATH 686 **Reading Course in Applied Mathematics**
MATH 687 **Control Theory**
MATH 688 **Stability Theory**
MATH 689 **Variational Methods**
MATH 691 **Mathematical Logic**
MATH 692 **Algebra**
MATH 693 **Number Theory**
MATH 694 **Group Theory**
MATH 696 **Ring Theory**
MATH 697 **Reading Course in Algebra**
MATH 698 **Category Theory**
MATH 699 **Topics in Algebra**
MATH 700 **Thesis** (21 credits)

MATH 701 **Project** (5 credits)
MATH 720 **Survival Analysis**
MATH 721 **Advanced Actuarial Mathematics**
MATH 722 **Advanced Pension Mathematics**
MATH 723 **Portfolio Theory**
MATH 724 **Advanced Risk Theory**
MATH 725 **Credibility Theory**
MATH 726 **Loss Distributions**
MATH 727 **Risk Classification**
MATH 728 **Reading Course in Actuarial Mathematics**
MATH 729 **Selected Topics in Actuarial Mathematics**

Academic Regulations

1. **GPA Requirement.** The academic progress of students is monitored on a periodic basis. To be permitted to continue in the program, students must obtain a cumulative grade point average (GPA) of 3.00 based on a minimum of 12 credits. Students whose GPA falls below 3.00 are considered to be on academic probation during the following review period. Students whose GPA falls below 3.00 for two consecutive review periods are withdrawn from the program.

2. **C Rule.** Normally a student receiving a grade of C in two courses will be required to withdraw from the program. Students withdrawing for this reason may petition the Graduate Studies Committee for special consideration. In cases of extenuating circumstances probationary continuation in the program will be considered.

3. **F Rule.** Students who receive a failing grade in the course of their studies will be withdrawn from the program. Students may apply for readmission. Students who receive another failing grade after re-admission will be withdrawn from the program.

4. **Time Limit.** All work for a M.A./M.Sc. degree for full-time students must be completed within 12 terms (4 years) from the time of initial registration in the program at Concordia University; for part-time students the time limit is 15 terms (5 years).

5. **Graduation Requirement.** In order to graduate, students must have a cumulative GPA of at least 3.00.

Master of/Magisteriate in Science/Arts with Thesis (Option A)

Candidates are required to take six 3-credit courses, or equivalent, and MAST 700.

Master of/Magisteriate in Science/Arts without Thesis (Option B)

Candidates are required to take ten 3-credit courses, or equivalent, and MAST 701.

The Master of Science/Arts courses offered by the Department of Mathematics and Statistics fall into the following categories:

MAST 650 History and Methods
MAST 655-659 Topology and Geometry
MAST 660-669 Analysis
MAST 670-679 Statistics and Actuarial Mathematics
MAST 680-689 Applied Mathematics
MAST 690-699 Algebra and Logic
MAST 720-729 Statistics and Actuarial Mathematics

The course content will be reviewed each year in light of the interests of the students and faculty. In any session only those courses will be given for which there is sufficient demand.

History and Methods

MAST 650 Development of Mathematical Ideas (6 credits)

Topology and Geometry

MAST 655 Topology (3 credits)
Topological spaces. Order, product, subspace, quotient topologies. Continuous functions. Compactness and connectedness. The fundamental group and covering spaces.

MAST 656 Differential Geometry (3 credits)
Mappings, functions and vectors fields on R^n, inverse and implicit function theorem, differentiable manifolds, immersions, submanifolds, Lie groups, transformation groups, tangent and cotangent bundles, vector fields, flows, Lie derivatives, Frobenius' theorem, tensors, tensor fields, differential forms, exterior differential calculus, partitions of unity, integration on manifolds, Stokes' theorem, Poincaré lemma, introduction to symplectic geometry and Hamiltonian systems.

MAST 657 Manifolds (3 credits)

MAST 658 Lie Groups (3 credits)

Analysis

MAST 661 Topics in Analysis (3 credits)

MAST 662 Functional Analysis I (3 credits)
This course will be an introduction to the theory of Hilbert spaces and the spectral analysis of self-adjoint and normal operators on Hilbert spaces. Applications could include Stone's theorem on one parameter groups and/or reproducing kernel Hilbert spaces.

MAST 663 Introduction to Ergodic Theory (3 credits)
This course covers the following topics: measurable transformations, functional analysis review, the Birkhoff Ergodic Theorem, the Mean Ergodic Theorem, recurrence, ergodicity, mixing, examples, entrophy, invariant measures and existence of invariant measures.

MAST 664 Dynamical Systems (3 credits)
An introduction to the range of dynamical behaviour exhibited by one-dimensional dynamical systems. Recurrence, hyperbolicity, chaotic behaviour, topological conjugacy, structural stability, and bifurcation theory for one-parameter families of transformation. The study of unimodal functions on the interval such as the family $F_r(X) = rx(1-x)$, where $0 \le r \le 4$. For general continuous maps of the interval, the structure of the set of periodic orbits, for example, is found in the theorem of Sarkovskii.

MAST 665 Complex Analysis (3 credits)
Review of Cauchy-Riemann equations, holomorphic and meromorphic functions, Cauchy integral theorem, calculus of residues, Laurent series, elementary multiple-valued functions, periodic meromorphic functions, elliptic functions of Jacobi and Wierstrass, elliptic integrals, theta functions. Riemann surfaces, uniformization, algebraic curves, abelian integrals, the Abel map, Riemann theta functions, Abel's theorem, Jacobi varieties, Jacobi inversion problem. Applications to differential equations.

MAST 666 Differential Equations (3 credits)

MAST 667 Reading Course in Analysis (3 credits)

MAST 668 Transform Calculus (3 credits)

MAST 669 Measure Theory (3 credits)
Measure and integration, measure spaces, convergence theorems, Radon-Nikodem theorem, measure and outer measure, extension theorem, product measures, Hausdorf measure, L^p-spaces, Riesz theorem, bounded linear functionals on C(X), conditional expectations and martingales.

Statistics and Actuarial Mathematics

MAST 670 Mathematical Methods in Statistics (3 credits)
This course will discuss mathematical topics which may be used concurrently or subsequently in other statistics stream courses. The topics will come mainly from the following broad categories; 1) geometry of Euclidean space; 2) matrix theory and distribution of quadratic forms; 3) measure theory applications (Reimann-Stieltjes integrals); 4) complex variables (characteristic functions and inversion); 5) inequalities (Cauchy-Schwarz, Holder, Minkowski, etc.) and numerical techniques (Newton-Raphson algorithm, scoring method, statistical differentials); 6) some topics from probability theory.

MAST 671 Probability Theory (3 credits)
Axiomatic construction of probability; characteristic and generating functions; probabilistic models in reliability theory; laws of large numbers; infinitely divisible distributions; the asymptotic theory of extreme order statistics.

MAST 672 Statistical Inference I (3 credits)
Order statistics; estimation theory; properties of estimators; maximum likelihood method; Bayes estimation; sufficiency and completeness; interval estimation; shortest length confidence interval; Bayesian intervals; sequential estimation.

MAST 673 Statistical Inference II (3 credits)
Testing of hypotheses; Neyman-Pearson theory; optimal tests; linear hypotheses; invariance; sequential analysis.

MAST 674 Multivariate Analysis (3 credits)
An introduction to multivariate distributions will be provided; multivariate normal distribution and its properties will be investigated. Estimation and testing problems related with multivariate normal populations will be discussed with emphasis on Hotelling's generalized T^2 and Wishart distribution. Other multivariate techniques including MANOVA; canonical correlations and principal components may also be introduced.

MAST 675 Sample Surveys (3 credits)
A review of statistical techniques and simple random sampling, varying probability sampling, stratified sampling, cluster and systematic sampling-ratio and product estimators.

MAST 676 Linear Models (3 credits)
Matrix approach to development and prediction in linear models will be used. Statistical inferences on the parameters will be discussed after development of proper distribution theory. The concept of generalized inverse will be fully developed and analysis of variance models with fixed and mixed effects will be analyzed.

MAST 677 Time Series (3 credits)
Statistical analysis of time series in the time domain. Moving average and exponential smoothing methods to forecast seasonal and non-seasonal time series, construction of prediction intervals for future observations, Box-Jenkins ARIMA models and their applications to forecasting seasonal and non-seasonal time series. A substantial portion of the course will involve computer analysis of time series using computer packages (mainly MINITAB). No prior computer knowledge is required.

MAST 678 Statistical Consulting and Data Analysis (3 credits)

MAST 679 Topics in Statistics and Probability (3 credits)

MAST 720 Survival Analysis (3 credits)
Parametric and non-parametric failure time models; proportional hazards; competing risks.

MAST 721 Advanced Actuarial Mathematics (3 credits)
General risk contingencies; advanced multiple life theory; population theory; funding methods and dynamic control.

MAST 722 Advanced Pension Mathematics (3 credits)
Valuation methods, gains and losses, stochastic returns, dynamic control.

MAST 723 Portfolio Theory (3 credits)
Asset and liability management models, optimal portfolio selection, stochastic returns, special topics.

MAST 724 Risk Theory (3 credits)
General risk models; renewal processes; Cox processes; surplus control.

MAST 725 Credibility Theory (3 credits)
Classical, regression and hierarchical Bayes models, empirical credibility, robust credibility, special topics.

MAST 726 Loss Distributions (3 credits)
Heavy tailed distributions, grouped/censured data, point and interval estimation, goodness-of-fit, model selection.

MAST 727 Risk Classification (3 credits)
Cluster analysis, principal components, discriminant analysis, Mahalanobis distance, special topics.

MAST 728 Reading Course in Actuarial Mathematics (3 credits)

MAST 729 Selected Topics in Actuarial Mathematics (3 credits)

Applied Mathematics

MAST 680 Topics in Applied Mathematics (3 credits)

MAST 681 Optimization (3 credits)
Introduction to nonsmooth analysis: generalized directional derivative, generalized gradient, nonsmooth calculus; connections with convex analysis. Mathematical programming: optimality conditions; generalized multiplier approach to constraint qualifications and sensitivity analysis. Application of the theory: functions defined as pointwise maxima of a family of functions; minimizing the maximal eigenvalue of a matrix-valued function; variational analysis of an extended eigenvalue problem.

MAST 682 Matrix Analysis (3 credits)
Jordan canonical form and applications, Perron-Frobenius theory of nonnegative matrices with applications to economics and biology, generalizations to matrices which leave a cone invariant.

MAST 683 Numerical Analysis (3 credits)
This course consists of fundamental topics in numerical analysis with a bias towards analytical problems involving optimization integration, differential equations and Fourier transforms. The computer language C++ will be introduced and studied as part of this course; the use of "functional programming" and graphical techniques will be strongly encouraged. By the end of the course, students should have made a good start on the construction of a personal library of tools for exploring and solving mathematical problems numerically.

MAST 684 Quantum Mechanics (3 credits)
The aim of this course is two-fold: (i) to provide an elementary account of the theory of non-relativistic bound systems, and (ii) to give an introduction to some current research in this area, including spectral geometry.

MAST 685 Approximation Theory (3 credits)

MAST 686 Reading Course in Applied Mathematics (3 credits)

MAST 687 Control Theory (3 credits)
Linear algebraic background material, linear differential and control systems, controllability and observability, properties of the attainable set, the maximal principle and time-optimal control.

MAST 688 Stability Theory (3 credits)

MAST 689 Variational Methods (3 credits)

Algebra and Logic

MAST 691 Mathematical Logic (3 credits)

MAST 692 Advanced Algebra I (3 credits)
Field extensions, normality and separability, normal closures, the Galois correspondence, solution of equations by radicals, application of Galois theory, the fundamental theorem of algebra.

MAST 693 Algebraic Number Theory (3 credits)
Dedekind domains; ideal class groups; ramification; discriminant and different; Dirichlet unit theorem; decomposition of primes; local fields; cyclotomic fields.

MAST 694 Group Theory (3 credits)
Introduction to group theory, including the following topics: continuous and locally compact groups, subgroups and associated homogeneous spaces. Haar measures, quasi-invariant measures, group extensions and universal covering groups, unitary representations, Euclidean and Poincaré groups, square integrability of group representations with applications to image processing.

MAST 696 Advanced Algebra II (3 credits)

MAST 697 Reading Course in Algebra (3 credits)

MAST 698 Category Theory (3 credits)

MAST 699 Topics in Algebra (3 credits)

Thesis and Mathematical Literature

MAST 700 Thesis (27 credits)

MAST 701 Project (15 credits)
A student investigates a mathematical topic, prepares a report and gives a seminar presentation under the guidance of a faculty member.

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Fax: 848-4511

Master of/Magisteriate in the Teaching of Mathematics

Admission Requirements. A Bachelor's degree, some experience in the teaching of pre-university mathematics, as well as an adequate mathematical background including: a) a course equivalent to 6 credits in statistics-probability; b) a course equivalent to 6 credits in advanced calculus; c) courses

equivalent to 6 credits in linear algebra and 3 credits in differential equations or algebraic systems. Candidates must be able to demonstrate their capacity for graduate level work in some academic field, not necessarily mathematics. Candidates will normally be interviewed to ensure their suitability for the program. Applicants with a deficiency in their academic background may be required to take up to 12 undergraduate credits in addition to and as a part of the regular graduate program. Promising candidates who lack the requirements for admission may be considered after having completed a qualifying program. Applicants without teaching experience may be admitted to the program provided they satisfy the Graduate Studies Committee of their potential for teaching or for educational research.

Application Deadlines. The deadline for Fall term is March 15; the deadline for Winter term is August 31. International applications must be received by February 1.

Requirements for the Degree

On admission into the program, students may enter the Secondary School Concentration (intended for secondary school teachers) or the College Concentration (intended for college teachers). In specialized mathematics education courses such as MATH 624 *Topics in Mathematics Education* or MATH 630 *Topics in the Psychology of Mathematics Education*, students will be asked to study the research literature and problems specific to their area of concentration. Likewise, students in the thesis or project option will be expected to work on a topic related to their concentration. Students in either concentration may, with the approval of the Graduate Studies Committee, transfer from one concentration to the other provided they have not accumulated more than 24 credits.

Master of/Magisteriate in the Teaching of Mathematics (Options A and B)

1. **Credits.** A fully-qualified candidate is required to complete a minimum of 45 credits.

2. **Residence.** The minimum residence requirement is one year (3 terms) of full-time study, or the equivalent in part-time study.
3. **Courses.**
   In each area of concentration students may select from
   A. *Thesis Option:* MATH 602, 647, 654 and eight additional 3-credit courses.
   B. *Project Option:* MATH 602, 603 and eleven additional 3-credit courses.
   C. *Course Option:* Students will normally take MATH 622, 626, 649; two courses from 601, 618, 621 and 627; one course from 633, 634, 636 and 639; and one course from 641, 642, 645 and 646; and eight additional courses.

MATH 601 may deal with any one of the topics: linear algebra, abstract algebra, analysis and statistics.

Academic Regulations

1. **GPA Requirement.** The academic progress of students is monitored on a periodic basis. To be permitted to continue in the program, students must obtain a cumulative grade point average (GPA) of 3.00 based on a minimum of 12 credits. Students whose GPA falls below 3.00 are considered to be on academic probation during the following review period. Students whose GPA falls below 3.00 for two consecutive review periods are withdrawn from the program.

2. **C Rule.** Normally a student receiving a grade of C in two courses will be required to withdraw from the program. Students withdrawing for this reason may petition the Graduate Studies Committee for special consideration. In cases of extenuating circumstances probationary continuation in the program will be considered.

3. **F Rule.** Students who receive a failing grade in the course of their studies will be withdrawn from the program. Students may apply for readmission. Students who receive another failing grade after re-admission will be withdrawn from the program.

4. **Time Limit.** All work for a master's/magisteriate degree for full-time students must be completed within 12 terms (4 years) from the time of initial registration in the program at Concordia University; for part-time students the time limit is 15 terms (5 years).

5. **Graduation Requirement.** In order to graduate, students must have a cumulative GPA of at least 3.00.

Courses

Each year the Department of Mathematics and Statistics offers a selection of courses from those listed below. Courses are worth 3 credits unless otherwise indicated.

MATH 601 **Topics in Mathematics**
MATH 602 **Readings in Mathematics Education** (Reading Course)
MATH 603 **Extended Project** (9 credits)
MATH 610 **Computing Systems in Mathematics**
MATH 613 **Topics in Number Theory**
MATH 616 **Linear Algebra**
MATH 618 **Topics in the Application of Mathematics**
MATH 621 **Geometry**

MATH 622 **Abstract Algebra**
MATH 624 **Topics in Mathematics Education**
MATH 625 **Topology**
MATH 626 **Analysis I**
MATH 627 **Analysis II**
MATH 630 **Topics in the Psychology of Mathematics Education**
MATH 633 **Applications of Technology in Mathematics Curriculum Development**
MATH 634 **Computer Software and Mathematics Instruction**
MATH 636 **Topics in Computational Mathematics**
MATH 637 **Statistics and Probability**
MATH 639 **Topics in Technology in Mathematics Education**
MATH 640 **Topics in Logic**
MATH 641 **Survey of Research in Mathematics Education**
MATH 642 **Research Methods for Mathematics Education**
MATH 645 **Topics in Mathematics Education Research**
MATH 646 **Research Internship**
MATH 647 **Topics in Mathematics Education** (Reading Course)
MATH 648 **Topics in the History of Mathematics**
MATH 649 **Heuristics and Problem Solving**
MATH 652 **Seminar in Mathematics Education**
MATH 654 **Thesis** (15 credits)

Any 600- or 700- MAST course (with permission of the department).

2100 Mackay PR-202
Tel.: 848-2424 ext. 2500; Fax: 848-4590

Philosophy

Faculty

Professors: Murray Clarke, Christopher Gray, Sheila Mason, Kai Nielsen, Vladimir Zeman; ***Associate Professors:*** Matthias Fritsch *(Graduate Program Director)*, Dennis O'Connor, Jack Ornstein; ***Assistant Professors:*** Andrea Falcon, Pablo Gilabert, Justin E. Smith *(Undergraduate Program Director)*.

Programs

The Department of Philosophy offers the degree of Master of/Magisteriate in Arts and provides for interested students the possibility of entering the Humanities interdisciplinary doctoral program. There are two program options in the master's degree: Master of/Magisteriate in Arts with thesis and Master of/Magisteriate in Arts with research papers. The Department has strong links with, and active participation in, the Doctor of Philosophy (Humanities) program.

Program Objectives

An important objective is to equip students with a solid background for entering the best Ph.D. programs in Philosophy. At the same time, we believe that the skills learned during the master's degree are very important for nonphilosophical careers. Clarity of thought, skillful reasoning and careful reflection are invaluable skills to develop, regardless of one's career path. To this end we offer courses in the following areas of philosophy: epistemology and metaphysics; logic, semantics and philosophy of science; ethics and political theory; and history of philosophy.

Faculty Research Interests

Frankly pluralist in orientation, faculty research contributes scholarly work in both Anglo-American analytic and continental thought. Research supervision, consequently, spans major historical figures, Anglo-American analytic philosophy, philosophy of natural and social sciences and continental thought.

Speakers and Colloquia

The department has an active speaker series and hosts international philosophical conferences, such as History of Philosophy of Science in June 2002, Conference in Honour of Kai Nielsen in October 2003. Recent speakers at

Concordia include Fred Dretske, Bas van Fraassen, Don Howard, Jaegwon Kim, Norman Daniels, Steven Lukes, Sir Anthony Kenny, and Rebecca Comay.

Gnosis

Our graduate students, with support and contributions from undergraduates, have published the journal Gnosis since 1973.

Master of/Magisteriate in Arts (Philosophy)

Admission Requirements. An honours degree in philosophy, or its equivalent. Qualified applicants requiring prerequisite courses may be required to take up to 12 undergraduate credits in addition to and as a part of the regular graduate program. Applicants with deficiencies in their undergraduate preparation may be required to take a qualifying program.

Application Deadlines. Detailed program information may be obtained from the secretary of the department. Applicants should apply online at: http://welcome.concordia.ca/. The deadline for completed applications is May 15 for those intending to take courses in the summer, July 15 for those intending to start in September, and December 1 for those who wish to begin in January.

Financial Assistance. Applications received by December 15 will receive consideration for Concordia Fellowships. Applications received by March 31 will receive consideration for teaching assistantships and research assistantships. Most new M.A. students receive a teaching assistantship. Some M.A. students receive a research assistantship. Concordia Fellowships are available on a competitive basis and there is provincial funding in the form of FQRSC scholarships.

Requirements for the Degree

1. **Credits.** A fully-qualified candidate is required to complete a minimum of 45 credits.

2. **Residence.** The minimum residence requirement is one year (3 terms) of full-time study, or the equivalent in part-time study.

3. **Options.** Students may enter one of the two options, A or B, outlined below.

4. **Cross-registration.** Graduate students in philosophy at Concordia University may take for credit the equivalent of 6 credits at the Université de Montréal, McGill University, or the Université du Québec à Montréal. Courses taken elsewhere may be accepted as credit for one graduate-level course in the Department of Philosophy. Permission for such a substitution must be granted by the Graduate Program Director in the Department of

Philosophy, and approval from the other university or department involved must be obtained.

Master of/Magisteriate in Arts with Thesis (Option A)

Candidates are required to take the following:

1. **Courses.** 18 course credits, including the 3-credit Core Seminar (PHIL 680).

2. **Core Seminar.** This 3-credit course (PHIL 680) will bring together all new students. It will provide an opportunity to consider a few pivotal works from contemporary philosophical literature.

3. **Thesis.** Each student will write a thesis (PHIL 696, 27 credits) on a topic to be determined in consultation with a faculty member. The thesis will be written under the guidance of a member of the department. The student's research proposal will be vetted by the Philosophy Graduate Studies Committee, and should be submitted before May 1 of the first year of full-time study, or the second year in the case of part-time study. A master's thesis in philosophy is expected to make an original contribution to knowledge. An oral defence of the thesis is required before an examining committee consisting of the thesis supervisor and two other professors chosen by the Graduate Program Director in consultation with the supervisor. Theses are graded Accepted or Rejected.

Master of/Magisteriate in Arts with Research Papers (Option B)

Candidates are required to take the following:

1. **Courses.** 18 course credits, including the 3-credit Core Seminar (PHIL 680).

2. **Core Seminar.** This 3-credit course (PHIL 680) will bring together all new students. It will provide an opportunity to consider a few pivotal works from contemporary philosophical literature.

3. **Research Papers.** Students will write two research papers (PHIL 693, 27 credits) on topics to be determined in consultation with one or more faculty members. These topics will be vetted by the Philosophy Graduate Studies Committee. The topics will be in different and distinct areas of research. Each research paper must be read and approved by the supervisor and one other faculty member. Each research paper is graded Accepted or Rejected.

Academic Regulations

1. **GPA Requirement.** The academic progress of students is monitored on a periodic basis. To be permitted to continue in the program, students must obtain a cumulative grade point average (GPA) of 3.00 based on a minimum of 12 credits. Students whose GPA falls below 3.00 are considered to be on

academic probation during the following review period. Students whose GPA falls below 3.00 for two consecutive review periods are withdrawn from the program.

2. **C Rule.** Students in research master's/magisteriate programs are allowed to receive no more than one C grade in order to remain in good standing in the university.

3. **F Rule.** Students who receive a failing grade in the course of their studies will be withdrawn from the program. Students may apply for readmission. Students who receive another failing grade after re-admission will be withdrawn from the program.

4. **Time Limit.** All work for a master's/magisteriate degree for full-time students must be completed within 12 terms (4 years) from the time of initial registration in the program at Concordia University; for part-time students the time limit is 15 terms (5 years).

5. **Graduation Requirement.** In order to graduate, students must have a cumulative GPA of at least 3.00.

Courses

All courses are worth 3 credits unless otherwise noted.

Please note that in courses where a *Special Subject* is listed, this *Special Subject* is a subtitle, and may change from year to year. Consequently, when students repeat a course number in subsequent years, but with a different subtitle, they may be engaged in courses with completely different content.

Topics in History of Philosophy

PHIL 601 Plato
PHIL 602 Aristotle
PHIL 604 Aquinas
PHIL 605 Berkeley
PHIL 606 Hume
PHIL 607 Kant
(2006-2007) Kant: Critique of Judgment
PHIL 609 Selected Topics
(2006-2007) Modern Jewish Philosophy
(2006-2007) Knowledge and Culture: Cassirer

Topics in Logic and Philosophy of Logic

PHIL 611 Metalogic

Topics in Ethics, Political Philosophy and Value Theory

PHIL 621 Value Theory
PHIL 623 Issues in Ethical Theory
(2006-2007) TBA
PHIL 624 Moral Problems
PHIL 625 Philosophy of Art
PHIL 626 Political Philosophy
(2006-2007) Critical Theory & Pragmatism
PHIL 627 Marx
PHIL 629 Philosophy of Culture

Topics in Epistemology

PHIL 630 Theories of Knowledge
PHIL 634 Selected Topics in Epistemology
(2006-2007) Modularity and Concepts

Topics in Metaphysics

PHIL 640 Metaphysics
PHIL 642 Contemporary Metaphysics
PHIL 643 Selected Topics in Metaphysics
(2006-2007) Objectivity

Topics in Philosophy of Science and Philosophy of Social Sciences

PHIL 650 Philosophy of Science
(2006-2007) Biotechnology
PHIL 651 Philosophy of Language
PHIL 655 Philosophy of the Social Sciences
(2006-2007) Philosophy of the Social and Human Sciences
PHIL 657 Philosophical Foundations of Relativity Theory

Topics in Contemporary Philosophy

PHIL 662 Studies in Existentialism
PHIL 663 Wittgenstein
PHIL 664 Philosophy of Mind
PHIL 666 Studies in Analytic Philosophy
PHIL 668 Studies in Phenomenology
(2006-2007) Phenomenology of the Social World

Selected Topics in Philosophy

PHIL 672 Tutorial
PHIL 675 Philosophy of Law
PHIL 676 Philosophical Psychology
PHIL 678 Topics in Current Research
PHIL 698 The Teaching of Philosophy
PHIL 680 Core Seminar
(2006-2007) The Problem of Species

Core Seminar, Research Papers, and Theses

PHIL 680 Core Seminar (3 credits)
This seminar provides an opportunity to study in depth a few pivotal works from contemporary, mainstream philosophical literature in areas such as epistemology, metaphysics, or ethics. The topic and text(s) vary from year to year.

PHIL 693 Research Papers (27 credits)
Students will write two research papers on topics to be determined in consultation with one or more faculty members. These topics will be vetted by the Philosophy Graduate Studies Committee. The topics will be in different and distinct areas of research. Each research paper must be read and approved by the supervisor and one other faculty member. Each research paper is graded Accepted or Rejected.

PHIL 696 Thesis (27 credits)
Each student will write a thesis on a topic to be determined in consultation with a faculty member. The thesis will be written under the guidance of a member of the department. The student's research proposal will be vetted by the Philosophy Graduate Studies Committee. A master's thesis in philosophy is expected to make an original contribution to knowledge. An oral defence of the thesis is required before an examining committee consisting of the thesis supervisor and two other professors chosen by the Graduate Program Director in consultation with the supervisor. Theses are graded Accepted or Rejected.

Cognate Courses

Students may enroll in certain courses in the Departments of Education, Political Science, and Religion with permission of the Philosophy Graduate Program Director and the second department involved.

Loyola Science Complex, (Annex "SP")
7141 Sherbrooke St. W.
Montreal, Quebec H4B 1R6
Tel: 848-2424 ext. 3271; Fax: 848-2828

Physics

Faculty

Professors: Barry Frank, Mariana Frank *(Chair)*, Calvin S. Kalman, Sushil K. Misra, Panagiotis Vasilopoulos; ***Associate Professors***: Ramesh C. Sharma, Joseph Shin.

Programs

The Department of Physics offers programs of study leading to the degrees of Doctor of/Doctorate in Philosophy and Master of/Magisteriate in Science.

Note: Admission is suspended for the 2006-2007 academic year.

Program Objectives

Both the master's and doctoral programs of the department are oriented towards fundamental and applied research and reflect the specialties of the faculty. The objectives of the programs are to give students as high and pertinent a training as possible for further research in universities or the private sector. Further details about the master's and doctoral degrees are given below.

A significant proportion of our students are "part-time", working in industry. In some cases, students may choose research projects which satisfy both their own employer and the university for industrial application and academic content. Upon admission full-time master's and doctoral students may receive, per year, up to $11,000 and $12,000, respectively, in the form of a Teaching Assistantship (from the department) and a Research Assistantship (from the supervisor's grants).

Faculty Research Interests

Research is conducted in the following areas: theoretical and experimental condensed matter physics (electron paramagnetic resonance, Mossbauer effect, quantum transport in microstructures); applied physics (sensing devices, linear and nonlinear ultrasonics, acoustic microscopy); statistical physics (spin glasses, neural networks, ferromagnetism); theoretical elementary particle physics and high energy physics (supersymmetry, supergravity, field theory,

CP violation, preon models); nuclear physics; stochastic quantum mechanics; geometrical methods in quantum mechanics. Funding for the research is provided by the federal and provincial governments and by the private sector. Access to the university's computer system as well as to the department's microcomputer laboratory is available to students for their thesis research.

Doctor of/Doctorate in Philosophy (Physics)

Admission Requirements. The normal requirement for admission is a Master of Science degree in Physics with high standing from a recognized university. Meritorious students enrolled in the Master of Science program in Physics at this university who have completed all requirements except for the thesis may apply for permission to proceed directly to doctoral studies without submitting a master's thesis.

Application Deadlines. The deadline for completed applications is July 29 (Fall term), October 30 (Winter term) and April 1 (Summer term).

Requirements for the Degree

1. **Credits.** A fully-qualified candidate, entering the doctoral program with a master's degree, is required to complete a minimum of 90 credits.

2. **Residence.** The minimum period of residence is two years (6 terms) of full-time graduate study beyond the master's degree, or the equivalent in part-time study, or three years (9 terms) of full-time graduate study beyond the bachelor's degree for those students who are permitted to enroll for doctoral studies without completing a master's degree.

3. **Courses.** The candidate is required to take the following:
   a. 9 credits chosen from PHYS 602, 603, 609, 636, 637, 639, 649, 676 and 679.
   b. PHYS 860: Doctoral Seminar on Selected Topics (6 credits), in which candidates must give two seminars in the field of their research;
   c. PHYS 870: Comprehensive Examination and Research Proposal (6 credits): The purpose of this course is to satisfy the department that the student is sufficiently prepared, in terms of background and ability, to pursue the research required for a Ph.D. Each student will be required to prepare a written project in his/her field of research. The topic will be general, and not part of the thesis work. The oral examination will be based on the contents of this report. The Graduate Program Committee will appoint an examination committee in consultation with the thesis supervisor. The supervisor will be responsible for the subject chosen and will also act as a member of the examining committee for the oral presentation. The comprehensive examination must be completed within four months after the candidate's initial registration in the Ph.D.

Program. The grade for this course will be a Pass or Fail. In case of failure in the first attempt, only one more attempt will be allowed to take place.

d. PHYS 890: Doctoral Research and Thesis (69 credits): A student who has passed the comprehensive examination will be admitted to candidacy for the Ph.D. degree. Under normal circumstances the student will be allowed to work on a research project under the direction of a faculty member of the department only after passing the comprehensive examination. The research done will be in areas which reflect the interests of the faculty and the facilities of the department. The thesis must make a distinct and original contribution to knowledge, and be presented in acceptable literary form. For purposes of registration, this work will be designated as PHYS 850.

Academic Regulations

1. **GPA Requirement.** The academic progress of students is monitored on a periodic basis. To be permitted to continue in the program, students must obtain a cumulative grade point average (GPA) of 3.00 based on a minimum of 6 credits. Students whose GPA falls below 3.00 are considered to be on academic probation during the following review period. Students whose GPA falls below 3.00 for two consecutive review periods are withdrawn from the program.

2. **C Rule.** Students who obtain less than a grade of B- in a course are required to repeat the course or take another course. Students receiving more than one C grade will be withdrawn from the program.

3. **F Rule.** Students who receive a failing grade in the course of their Ph.D. studies will be withdrawn from the program. Students may apply for readmission. Students who receive another failing grade after re-admission will be withdrawn from the program.

4. **Time Limit.** All work for a doctoral degree must be completed before or during the calendar year, 18 terms (six years) of full-time study or 24 terms (eight years) of part-time study from the time of original registration in the program.

5. **Graduation Requirement.** In order to graduate, students must have a cumulative GPA of at least 3.00.

Master of/Magisteriate in Science (Physics)

Admission Requirements. Applicants must have an honours degree, or its equivalent in Physics. Qualified applicants lacking prerequisite courses will be required to take undergraduate courses (up to 12 credits) in addition to the

regular graduate program. Applicants with deficiencies in their undergraduate preparation may be required to take a one-year qualifying program before admission to the M.Sc. program.

Application Deadlines. The deadline for completed applications is July 29 (Fall term), October 30 (Winter term) and April 1 (Summer term).

Requirements for the Degree

1. **Credits.** A fully-qualified candidate is required to complete a minimum of 45 credits.

2. **Residence.** The minimum residence requirement is one year (3 terms) of full-time study, or the equivalent in part-time study.

3. **Courses.** Students may enter either Option A or Option B outlined below.

Master of/Magisteriate in Science with Thesis (Option A)

Candidates are required to take the following:
1. PHYS 601 (3 credits);

2. 9 credits chosen from PHYS 602, 603, 609, 636, 637, 639, 649, 676 and 679.

3. PHYS 760: M.Sc. Seminar on Selected Topics (3 credits). Students must give one seminar in the field of their research.

4. PHYS 790: Master's Research and Thesis (30 credits): The thesis must represent the results of the student's original research work undertaken after admission to this program. Work previously published by the student may be used only as introductory or background subject matter. The thesis will be examined by a departmental committee. An oral examination will be conducted to test the candidate's ability to defend the thesis.

5. The thesis may be based on a study of a significant problem in physics or a research project conducted as part of the student's employment. Permission to submit a thesis in the latter category will be granted in the event that:
   a. the student's employer furnishes written approval for the pursuit and reporting of the project;
   b. the student has research facilities which, in the opinion of the physics graduate studies committee, are adequate;
   c. arrangements can be made for supervision of the project by a faculty member of the Department of Physics;
   d. in all but exceptional cases, the student has direct supervision by a qualified supervisor at the site of the student's employment. The supervisor must be approved by the physics graduate studies committee.

A written working agreement between the supervisor and the university will be required;

e. the proposed topic for the thesis, together with a brief statement outlining the proposed method of treatment, is approved by the physics graduate studies committee.

Master of/Magisteriate in Science with Report (Option B)

Candidates are required to take the following:

1. PHYS 601 (3 credits);

2. 9 credits chosen from PHYS 602, 603, 609, 636, 637, 639, 642, 644, 646, 648, 649, 676, 679.

3. 12 credits chosen from any 600-level course in Physics or related disciplines (e.g. Chemistry, Engineering or Computer Science).

4. PHYS 760: M.Sc. Seminar on Selected Topics (3 credits). Students must give one seminar in the field of their research.

5. PHYS 780: Report on a Specific Subject (18 credits). The report shall contain in appropriate form the results of a research exercise conducted by the candidate in a specified subject.

Academic Regulations

1. **GPA Requirement.** The academic progress of students is monitored on a periodic basis. To be permitted to continue in the program, students must obtain a cumulative grade point average (GPA) of 3.00 based on a minimum of 12 credits. Students whose GPA falls below 3.00 are considered to be on academic probation during the following review period. Students whose GPA falls below 3.00 for two consecutive review periods are withdrawn from the program.

2. **C Rule.** Students in research master's/magisteriate programs are allowed to receive no more than one C grade in order to remain in good standing in the university.

3. **F Rule.** Students who receive a failing grade in the course of their studies will be withdrawn from the program. Students may apply for readmission. Students who receive another failing grade after re-admission will be withdrawn from the program.

4. **Time Limit.** All work for a master's/magisteriate degree for full-time students must be completed within 12 terms (4 years) from the time of initial

registration in the program at Concordia University; for part-time students the time limit is 15 terms (5 years).

5. **Graduation Requirement.** In order to graduate, students must have a cumulative GPA of at least 3.00.

Courses

All courses are worth 3 credits each unless otherwise specified. The graduate courses offered by the Department of Physics fall into the following categories:

PHYS 600-609 Topics in Quantum and High Energy Physics
PHYS 630-639 Topics in Condensed Matter Physics
PHYS 640-649 Topics in Theoretical Physics
PHYS 670-679 Topics in Applied Physics

Topics in Quantum and High Energy Physics (600-609)

PHYS 601 Advanced Quantum Mechanics I (3 credits)
This course reviews the mathematical foundations of quantum mechanics, Heisenberg, Schroedinger, and interaction representations; time-dependent perturbation theory and the golden rule; collision theory, Born approximation, T-matrix and phase shifts; angular momentum theory: eigenvalues and eigenvectors, spherical harmonics, rotations and spin, additions theorems and their applications.
Note: Students who have received credit for PHYS 612 may not take this course for credit.

PHYS 602 Advanced Quantum Mechanics II (3 credits)
The following applications are examined: *non-relativistic theory* - systems of identical particles, second quantization, Hartree-Fock theory, as well as path integral formulation of quantum mechanics; *relativistic theory:* Dirac and Klein-Gordon equations, positron theory, propogator theory and their applications; field quantization, radiative effects, Dirac and Majorana spinors, Noether's theorem.
Note: Students who have received credit for PHYS 613 may not take this course for credit.

PHYS 603 High Energy Physics (3 credits)
This course discusses symmetries and groups; antiparticles; electrodynamics of spinless particles, the Dirac equation and its implications for the electrodynamics of spin 1/2 particles. A general discussion of loops, renormalization and running coupling constants, hadronic structure and partons, is used to introduce the principles of Quantum Chromodynamics and

Electroweak Interactions. The course concludes with an exposition of gauge symmetries, the Weinberg-Salam model, and Grand Unification.
Note: Students who have received credit for PHYS 616 may not take this course for credit.

PHYS 609 Selected Topics in Quantum or High Energy Physics (3 credits)
This course reflects the research interests of the physics faculty in quantum or high energy physics and/or those of the graduate students working with them.
Note: Students who have taken the same topic under PHYS 615, PHYS 618 or PHYS 619 may not take the course for credit.

Topics in Condensed Matter Physics (630-639)

PHYS 636 Condensed Matter Physics I (3 credits)
Crystal structure; crystal diffraction and the reciprocal lattice; crystal binding, phonons, and lattice vibrations; free electron fermi gas; energy bands and semiconductor crystals; fermi surfaces and metals.
Note: Students who have received credit for PHYS 632 may not take this course for credit.

PHYS 637 Condensed Matter Physics II (3 credits)
Dielectrics and ferroelectrics; diamagnetism and paramagnetism; ferro-magnetism and antiferromagnetism; magnetic resonance; optical phenomena in insulators; superconductivity.
Note: Students who have received credit for PHYS 633 may not take this course for credit.

PHYS 639 Selected Topics in Condensed Matter Physics (3 credits)
This course reflects the research interests of the physics faculty in condensed matter physics and/or those of the graduate students working with them.
Note: Students who have received credit for PHYS 635 may not take this course for credit.

Topics in Theoretical Physics (640-649)

PHYS 642 Statistical Physics (3 credits)
This course covers statistical concepts, probability, Gaussian probability distribution, statistical ensemble, macrostates and microstates, thermodynamic probability, statistical thermodynamics, reversible and irreversible processes, entropy, thermodynamic laws and statistical relations, partition functions, Maxwell's distribution, phase transformation, Maxwell-Boltzmann, Bose-Einstein and Fermi-Dirac statistics, quantum statistics in the classical limit, black-body radiation, conduction electrons in metals, interacting particle system, lattice vibrations, virial coefficients, Weiss molecular field approximation.

Note: Students who have received credit for PHYS 654 may not take this course for credit.

PHYS 644 Advanced Classical Mechanics and Relativity (3 credits)
This course covers generalized coordinates, Lagrange's equations, method of Lagrange multipliers, variational formulation, Hamilton's equations of motion, canonical transformations, Hamilton-Jacobi theory, special theory of relativity, Einstein's axioms, Lorentz transformations, form invariance and tensors, four-vectors, gravity.
Note: Students who have received credit for PHYS 658 may not take this course for credit.

PHYS 646 Electromagnetic Theory (3 credits)
This course covers the electrostatic boundary-value problem with Green's function, Maxwell's equations, energy-momentum tensor, guided waves, dielectric wave-guides, fibre optics, radiation static field, multipole radiation, velocity and acceleration field, Larmor's formula, relativistic generalization, radiating systems, linear antenna, aperture in wave guide, scattering, Thompson scattering, Bremsstrahlung, Abraham-Lorentz equation, Breit-Wigner formula, Green's function for Helmholtz's equation. Noether's theorem.
Note: Students who have received credit for PHYS 656 or PHYS 657 may not take this course for credit.

PHYS 648 Non Linear Physics

PHYS 649 Selected Topics in Theoretical Physics (3 credits)
This course reflects the research interests of the Physics faculty in theoretical physics and/or those of the graduate students working with them.

Topics in Applied Physics (670 - 679)

PHYS 676 Physics of Acoustic Devices (3 credits)
The course contents include the following: sound wave propagation, stress, strain wave impedance, bulk modes; piezoelectric transducers, isotropic media, bulk modes, transmission and reflection, surface waves, acoustic waveguides; finite sources, piston transducer, diffraction, transient sources, pulsed excitations; focused transducers, scanned acoustic microscope; acoustic imaging, A, B, and C scans, phased arrays, scanning laser acoustic microscope; reflection and scattering of acoustic waves, acoustic devices, resonators, filters, charge transfer devices, acousto-optic devices; piezoelectric sensing devices, bulk, surface, plate and fibre modes; introduction to chemosensory and biosensors, molecular and pattern recognition, optical sensors, examples of practical devices.

Note: Students who have received credit for PHYS 675 may not take this course for credit.

PHYS 677 Digital Electronics (3 credits)
This course explores the basic electronic components which make up modern laboratory apparatus including microcomputers. The course includes experimental studies of various small-, medium-, and large-scale integrated circuits (SSI, MSI & LSI circuits) including digital-to-analogue and analogue-to-digital converters (Daces and ADCs). A circuit is designed, bread-boarded and tested to perform a common laboratory or computer-related function, such as EPROM programming.
Note: Students who have received credit for PHYS 673 may not take this course for credit.

PHYS 679 Selected Topics in Applied Physics (3 credits)
This course reflects the research interests of the Physics faculty in Applied Physics and/or those of the graduate students working with them.

Seminar, Report, Thesis, and Comprehensive Examination

PHYS 760 M.Sc. Seminar on Selected Topics (3 credits)
Students must given one seminar in the field of their research. In addition, full time students must participate in all seminars given in the department, and part time students must attend, during their studies, the same number of seminars that are normally given during the minimum residence requirement for full time students. The course in evaluated on a pass/fail basis. No substitution is permitted.

PHYS 780 Report on a Specific Subject (18 credits)

PHYS 790 Master's Research and Thesis (30 credits)

PHYS 860 Doctoral Seminar on Selected Topics (6 credits)
Students must give two seminars in the field of their research. In addition, full time students must participate in all seminars given in the department and part time students must attend during their studies, the same number of seminars that are normally given during the minimum residence requirement for full time students. The course is evaluated on a pass/fail basis. No substitution is permitted.

PHYS 870 Comprehensive Examination and Research Proposal (6 credits)

PHYS 890 Doctoral Research and Thesis (69 credits)
Note: Students admitted prior to 1997-98 should register for PHYS 850 (70 credits). Students admitted after summer 1997 will register for PHYS 850 (66 credits).

Discontinued Courses		Replaced by	
PHYS 632	Solid State Physics I	PHYS 636	Condensed Matter Physics I
PHYS 633	Solid State Physics II	PHYS 637	Condensed Matter Physics II
PHYS 658	Advanced Classical Mechanics and Relativity	PHYS 644	Advanced Classical Mechanics
PHYS 673	Digital Electronics	PHYS 677	Digital Electronics
PHYS 612	Advanced Quantum Mech. I	PHYS 601	Advanced Quantum Mechanics I
PHYS 613	Advanced Quantum Mech. II	PHYS 602	Advanced Quantum Mechanics II
PHYS 616	Elementary Particle Physics	PHYS 603	High Energy Physics
PHYS 635	Selected Topics in Solid State Physics	PHYS 639	Selected Topics in Condensed Matter Physics
PHYS 654	Statistical Physics	PHYS 642	Statistical Physics
PHYS 656	Electromagnetic Theory	PHYS 646	Electromagnetic Theory
PHYS 675	Physics of Acoustic Devices	PHYS 676	Physics of Acoustic Devices

Hall Building, H-1225-19
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Political Science

Faculty

Professors: Harold R. Chorney, Marcel Danis, Horst Hutter, Guy F. Lachapelle, Daniel Salée, Reeta C. Tremblay; ***Associate Professors:*** Brooke Jeffrey, Csaba Nikolenyi, Maben Poirier, Everett M. Price, Norrin Ripsman, Peter Stoett *(Chair)*; ***Assistant Professors****:* Antoine Bilodeau, Graham Dodds, Axel Huelsemeyer, Mebs Kanji, James Kelly, *(Graduate Program Director)*, Arang Keshavarzian, Ed King, André Lecours, Michael Lipson, Kimberley Manning, Patrik Marier *(Canada Research Chair)*, Jean-François Mayer, Francesca Scala, Leander Schneider, Julian Schofield, Travis Smith, Marlene Sokolon.

Programs

The Department of Political Science offers the degrees of Doctor of/Doctorate in Philosophy (Political Science) and a Master of/ Magisteriate in Arts in Public Policy and Public Administration. It also participates with the Department of Geography, Planning and Environment in an option which offers students the opportunity to specialize in this area.

Faculty Research Interests

Faculty expertise and research interests are well represented in each of the five sub-fields of Political Science which include public policy and public administration, Canadian and Québec politics, international politics, comparative politics, and political theory. *Public Policy and Public Administration:* unemployment, monetary and fiscal policy, Keynesian versus monetarist policies, urbanization and urban public policy, public opinion, public policy and program evaluation, international security policy, defence policy, the Canadian and Québec states and indigenous peoples, health policy, social policy, Canadian public administration, and refugee policies. *Canadian and Quebec Politics:* Canadian and comparative federalism and intergovernmental affairs, reorganization of the Federal Public Service, the evolution of collaborative federalism and social policy in Canada, Canadian political and legal institutions, the legislative process and the machinery of government, the national question in Québec, Indigenous peoples and the state, identity politics. *International Politics:* international security policy, policy making within international organizations, economic globalization, regional integration, theories of the state in international relations, foreign security policy in democratic states, postwar peacemaking, economic interdependence and international conflict, the efficacy of international sanctions, theory of strategic and naval arms control, ballistic missile defence, defence budgeting,

political economy of military regimes; global environmental politics, critical security studies, human rights and refugee studies. *Comparative Politics:* covering regions including South Asia, China, Africa, the Middle East, Latin America, Western Europe, Eastern Europe and the United States; comparative federalism; economic networks, state-society relations in the Middle East and North Africa; comparative voting behaviour, sub-state nationalism and social policy, para-diplomacy, state/majority nationalism, gender in comparative politics, processes of democratization, the political involvement of labour unions, socioeconomic policies in Latin America; coalition and party politics in new democracies, comparative electoral and party systems. *Political Theory:* moral and political philosophy, history of ideas, the Enlightenment, modern political thought, the politics of anger, Plato, Nietzsche, Voegelin, M. Polanyi, John C. Calhoun.

Doctor of/Doctorate in Philosophy (Political Science) *

Program Objectives

The objective of the Doctor of/Doctorate in Philosophy (Political Science) is to provide students with a sound theoretical training so that they can have wide-ranging knowledge of the discipline and be prepared for a career in teaching and research and for research careers in public and private organizations. Students will acquire competence in two areas of specialization in political science with a common emphasis on the policy domain. Students will be exposed to major methodological and theoretical debates, thus preparing them for an original theoretical contribution to the discipline theoretically. The department is committed to maintaining graduate training in the full range of expertise contained in the five areas of specialization of contemporary political science. This program requires each student to write a dissertation that makes an original contribution to the field and to publicly defend their research findings. Students are also expected to disseminate research findings through the publication of reports and academic papers.

Admission Requirements.
Admission to the Ph.D. in Political Science requires a Master of/Magisteriate in Arts in political science, political studies, international relations, public policy, or another relevant field from an accredited university. A superior academic record and strong references are both essential; professional work experience will be taken into consideration. Applicants are selected on the basis of past academic record, letters of recommendation, statement of purpose, writing sample, and the relevance of their proposed research to the research expertise in the department.
Enrolment in the Ph.D. in Political Science is limited in part by the availability of research supervisors.

* Subject to MELS approval

Application Deadlines The deadline for completed applications is February 1 for the fall term.

Proficiency in English. Any student applying from outside Canada whose first language is other than English must demonstrate proficiency in the English language by writing the Test of English as a Foreign Language administered by the Educational Testing Service. Information and applications to write the test may be obtained by writing to: Test of English as a Foreign Language, Educational Testing Service, Princeton, New Jersey, 08540, U.S.A.

Requirements for the Degree

1. **Credits.** A fully qualified candidate is required to complete a minimum of 90 credits. In order to fulfill the requirements of the program, students will select two areas of specialization. The requirements are 21 credits of course work, 12 credits in the form of two comprehensive exams, 3 credits of thesis proposal, and 54 credits of thesis.

2. **Residence Requirements.** The minimum period of residence is two calendar years (6 terms) of full-time graduate study beyond the Master's degree or the equivalent in part-time study.

3. **Courses** (21 credits). All candidates must take seven 3-credit courses as described below:
   All students will select two areas of specialization (for example Canadian Politics and International Politics). Course work is divided into core courses and elective courses. Each student will take:
   - 2 core courses, one in each of the two chosen areas of specialization (POLI 801-805 Advanced Seminars);
   - 2 elective courses, one in each of the same two chosen areas of specialization (POLI 811-815);
   - 1 core course in public policy (POLI 805), where public policy is one of the two chosen areas of specialization, the elective course is to be selected from a third area;
   - 1 elective course from any area of specialization or a cognate course in a related field;
   - 1 methods course (POLI 844).

4. **Comprehensive Examination** (12 credits in the form of 2 comprehensive examinations). All candidates are required to write two 6-credit comprehensive exams in their two areas of specialization, so that they are deemed competent to teach at the university level in these two areas. There will be a four-hour written exam for each area and a one-hour oral defence of the exam within a week of writing the former. Students must pass the written exam to move forward to the oral exam, but can still fail an exam with an incompetent oral performance. Failed exams (written or oral) will

be permitted one re-take; a second failure will result in the student being withdrawn from the program.

5. **Thesis Proposal** (3 credits). In year two, after completion of the course work, the candidate with the concurrence and assistance of the Graduate Program Director finalizes the three-member supervisory committee, consisting of the principal supervisor and two other members, with at least one member from outside the department. Students are required to complete and defend their thesis proposal before the supervisory committee in a meeting chaired by the Graduate Program Director. The thesis proposal will include a literature review and a fully justified research agenda. In cases where the supervisory committee is not satisfied with the proposal, the student can resubmit and re-defend. A second unsatisfactory proposal would result in the student being withdrawn from the program.

6. **Thesis** (54 credits). The candidate who has passed the Ph.D. Comprehensive Examinations and the thesis proposal will proceed to the final requirement. The final requirement is the writing and defence of an original doctoral thesis that contributes to one of the student's areas of concentration. It shall be of publishable quality, and the defence will be before six committee members: the student's original supervisory committee and two external committee members (one external to the department within the university and one external to the university).

7. **Language Requirement.** Ph.D. candidates must pass an examination either in French or in a language (other than English) which is required in their area of research.

Academic Regulations.

1. **GPA Requirement.** The academic progress of students is monitored on a periodic basis. To be permitted to continue in the program, students must maintain a cumulative grade point average (GPA) of 3.00 based on a minimum of 12 credits. Students whose GPA falls below 3.00 are considered to be on academic probation during the following review period. Students whose GPA falls below 3.00 for two consecutive review periods are withdrawn from the program.

2. **C Rule.** A graduate student who receives one grade of C will be evaluated by the Departmental Graduate Studies Committee with respect to that student's continuance in the program. Two C's will be grounds for automatic withdrawal from the program.

3. **F Rule.** Students who receive a failing grade in the course of their Ph.D. studies will be withdrawn from the program.

4. **Time Limit.** All work for a doctoral degree must be completed within 18 terms (6 years) of full-time study or 24 terms (8 years) of part-time study from the time of original registration in the program.

5. **Graduation Requirement.** In order to graduate, students must have a cumulative GPA of at least 3.00.

Courses

The Department offers graduate courses in the following five core fields:
- Comparative Politics
- International Politics
- Canadian and Québec Politics
- Political Theory
- Public Policy and Administration

Core Courses

POLI 801 Advanced Seminar in Comparative Politics (3 credits)
This course is a survey of the field of comparative politics at an advanced level. It examines major theories, concepts and methods of comparative political analysis.

POLI 802 Advanced Seminar in International Politics (3 credits)
This course is a survey of core concepts of international politics at an advanced level. It examines major theoretical perspectives and their application to historical and contemporary international issues.

POLI 803 Advanced Seminar in Canadian and Québec Politics (3 credits)
This course is a survey of the field at an advanced level. It presents a discussion of contemporary issues and controversies in Canadian and Québec politics.

POLI 804 Advanced Seminar in Political Theory (3 credits)
This course is a survey of leading research in political theory and political philosophy, including the history of political thought, normative political theory and contemporary political thought.

POLI 805 Advanced Seminar in Public Policy and Public Administration (3 credits)
This course surveys several theoretical models and paradigms of public policy and public administration. It examines critically the intellectual and ideological traditions of policy analysis.

POLI 844 Advanced Research Methods (3 credits)
This course explores differing research philosophies and strategies, considering philosophical critiques of different approaches. *Prerequisite:* POLI 644 or equivalent.

Elective Courses

POLI 811 Special Topics in Comparative Politics (3 credits)
Topics vary from year to year.

POLI 812 Special Topics in International Politics (3 credits)
Topics vary from year to year.

POLI 813 Special Topics in Canadian and Québec Politics (3 credits)
Topics vary from year to year.

POLI 814 Special Topics in Political Theory (3 credits)
Topics vary from year to year.

POLI 815 Special Topics in Public Policy and Public Administration (3 credits)
Topics vary from year to year.

POLI 898 Directed Studies (3 credits)
This special reading course is designed to explore topics and themes relevant to a student's doctoral research. *Prerequisite:* Permission of the Ph.D. Committee.

Comprehensive Exams

POLI 885 Comprehensive Exam (6 credits)
POLI 886 Comprehensive Exam (6 credits)

Thesis

POLI 889 Thesis Proposal (3 credits)
POLI 890 Thesis (54 credits)

Master of/Magisteriate in Arts - Public Policy and Public Administration (MPPPA)

Program Objectives

Through an innovative blending of scholarly and vocational values, the Master of/Magisteriate in Arts - Public Policy and Public Administration (MPPPA) program is designed to provide an educational milieu that prepares its graduates for further studies at the doctoral level and for employment in the

public or private sector. The involvement of faculty members from various departments within the university and specialists from outside of the university ensures that students have a broad exposure to the most crucial elements of Public Policy and Administration. The multi-disciplinary approach provides the students with the skills and understanding needed by those who wish to become creative participants in the shaping of their community. The aim of the program is to combine academic excellence with professional expertise in order to facilitate an understanding of how public policy is formulated and administered in Canada, Québec and the world. The program enables students to study a challenging array of policy issues in the context of the administrative and policy making processes that operate nationally and internationally. A core element of the program involves an understanding of the management process through which policies are implemented in the public sector, and an awareness of the dynamic interdependence between public and private responsibilities.

Options and Areas of Concentration

This program has common requirements (POLI 636 and POLI 644) that apply to all students. But it also has options that allow students to choose whether to pursue a thesis, internship, or courses only.

In addition, the program offers areas of concentration which permit students to choose the field of study that is most appropriate in terms of their interests and long-term goals.

Upon application, students in Political Science enter Option A (MPPPA with Courses). Once in the program, students have the opportunity to transfer to Option C (MPPPA with Thesis) or to Option B (MPPA with Internship). To enter the internship students must complete the prescribed number of courses and achieve an acceptable level of academic excellence.

Students interested in Geography enter Option D (MPPPA with Thesis) and are eligible to take advantage of Option E (MPPPA with Internship) once they are in the program.

Potential candidates must choose an area of concentration in their field of interest. The areas of **concentration** are:
- Public Administration and Decision Making
- Public Policy and Social and Political Theory
- International Public Policy and Administration
- Political Economy and Public Policy
- Comparative Public Policy
- Geography and Public Policy

Admission Requirements. An undergraduate honours degree or the equivalent is required. Students who do not have the necessary background in public policy and public administration as well as in the **concentration** which they have chosen, may be required to take specific undergraduate courses in addition to the regular program. In certain cases, applicants may be required to complete a qualifying program in order to be eligible for admission to the graduate program.

Students who were educated outside Canada and whose mother tongue is neither English nor French will be required to successfully complete a TOEFL (Test of English as a Foreign Language) exam before being admitted.

Application Deadlines. The deadline for admission is February 15 for Fall and November 1 for Winter.

Requirements for the Degree

1. **Credits.** A fully qualified candidate is required to complete a minimum of 45 credits.

2. **Core Courses.** Political Science students must complete two 3-credit core courses, POLI 636 (Theories of Public Policy and Public Administration), and POLI 644 (Research Methods).
   For students in the Geography option the core requirements are somewhat different. Geography students should consult the calendar entry dealing with that option.

3. **Residence.** The minimum residence requirement is one year (3 terms) of full-time study, or the equivalent in part-time study.

4. **Language Requirement.** Students are normally expected to demonstrate an ability to read and understand literature relevant to their field in both French and English.

Academic Regulations.

1. **GPA Requirement.** The academic progress of students is monitored on a periodic basis. To be permitted to continue in the program, students must obtain a cumulative grade point average (GPA) of 3.00 based on a minimum of 12 credits. Students whose GPA falls below 3.00 are considered to be on academic probation during the following review period. Students whose GPA falls below 3.00 for two consecutive review periods are withdrawn from the program.

2. **C Rule.** Students in research master's/magisteriate programs are allowed to receive no more than one C grade in order to remain in good standing in the university.

3. **F Rule.** Students who receive a failing grade in the course of their studies will be withdrawn from the program. Students may apply for readmission. Students who receive another failing grade after re-admission will be withdrawn from the program.

4. **Time Limit.** All work for a master's/magisteriate degree for full-time students must be completed within 12 terms (4 years) from the time of initial registration in the program at Concordia University; for part-time students the time limit is 15 terms (5 years).

5. **Graduation Requirement.** In order to graduate, students must have a cumulative GPA of at least 3.00.

Master of/Magisteriate in Arts with Courses Only (Option A)

1. **Core Courses.** POLI 636 and POLI 644 (6 credits).

2. **Concentration Courses.** Any five 3-credit courses chosen from one of the following concentrations (15 credits).
   - Public Administration and Decision Making
   - Public Policy and Social and Political Theory
   - International Public Policy and Administration
   - Political Economy and Public Policy
   - Comparative Public Policy
   - Geography and Public Policy

3. **Approved Elective and Cognate Courses.** Six 3-credit courses chosen from the fields of concentration in the program or from courses offered in related disciplines. Approval of the Director is required. In some cases approval for registration in cognate courses must be obtained from the department involved (18 credits).

4. **Extended Research Essay.** POLI 691. The Extended Research Essay is a directed study supervised by a faculty member with whom a student completed a course in their area of concentration. This degree requirement builds on a term paper submitted at the graduate level and is considered to be a significant revision and extension of the term paper submitted in the concentration course (6 credits).

Master of/Magisteriate in Arts with Internship (Option B)

Upon admission into the program, students are registered in Option A. Acceptance into Option B is based on availability of internships, completion of course work, and the student's performance while in the program.

1. **Core Courses.** POLI 636 and POLI 644 (6 credits).

2. **Concentration Courses.** Four 3-credit courses to be chosen from one of the following fields of concentration (12 credits).
   - Public Administration and Decision Making
   - Public Policy and Social and Political Theory
   - International Public Policy and Administration
   - Political Economy and Public Policy
   - Comparative Public Policy
   - Geography and Public Policy

3. **Approved Elective and Cognate Courses.** Four 3-credit courses chosen from the fields of concentration in the program or from courses offered in related disciplines. Approval of the Director is required. In some cases approval for registration in cognate courses must be obtained from the department involved (12 credits).

4. **Internship with Research Paper.** POLI 693. The internship is a four-month job placement in either the public or private sector. Students work with their faculty supervisor to prepare a written research paper which is presented in an oral examination. The internship research paper is an original theoretical work that comprises a series of policy recommendations that contribute to the policy process in Canada (15 credits).

Master of/Magisteriate in Arts with Thesis (Option C)

Students will submit a thesis proposal for approval and register for this option after at least one term of full-time study.

1. **Core Courses.** POLI 636 and POLI 644 (6 credits).

2. **Concentration Courses.** Three 3-credit courses chosen from one of the following concentrations (9 credits).
   - Public Administration and Decision Making
   - Public Policy and Social and Political Theory
   - International Public Policy and Administration
   - Political Economy and Public Policy
   - Comparative Public Policy
   - Geography and Public Policy

3. **Approved Elective and Cognate Courses.** Two 3-credit courses chosen from the fields of concentration in the program or from courses offered in related disciplines. Approval of the Director is required. In some cases approval for registration in cognate courses must be obtained from the department involved (6 credits).

4. **Thesis Proposal.** POLI 694. This course is a directed study involving a comprehensive understanding of the literature in the area of research directly relevant to the thesis topic under the direction of a faculty supervisor. The written assignments involve a comprehensive literature review, annotated bibliography and research design that culminate in a thesis proposal presented in an oral defence (3 credits).

5. **Thesis.** POLI 696. Students who elect this option work under the supervision of a faculty thesis director on a topic approved by the graduate committee. The thesis is defended before a committee consisting of the thesis director and two faculty members in the graduate program (21 credits).

Master of/Magisteriate in Arts with Thesis (Geography Option D)

Master of/Magisteriate in Arts with Internship (Geography Option E)

Please see the ***Geography, Planning and Environment*** section of this Calendar for a full description of Options D and E.

Courses

All courses are one-term, 3-credit courses unless otherwise indicated. Some courses are offered in French.

Core Courses

POLI 636 Theories of Public Policy and Public Administration
POLI 644 Research Methods

Public Administration and Decision Making

POLI 600 Public Policy and the Governmental Process in Canada
POLI 602 Public Policy and the Governmental Process in Québec
POLI 606 Policy Making and the National Purpose in Canada
POLI 611 Judicial Politics and Policy
POLI 615 The Politics of Citizenship in Canada
POLI 618 Canadian Public Administration
POLI 621 Political Leadership and Decision Making
POLI 624 Public Administration of Intergovernmental Affairs
POLI 628 Ethics and Values in Public Policy Making
POLI 629 Critical Perspectives in Development

POLI 630 Organizational Theory
POLI 634 Policy Analysis and Program Evaluation
POLI 640 Business and Public Policy
POLI 643 Rational and Public Choice
POLI 645 Indigenous Peoples and the State
POLI 683 Special Topics in Public Administration and Decision Making
POLI 695 Directed Studies

Public Policy and Social and Political Theory

POLI 605 Environmental Law
POLI 610 Economic Policy After Keynes
POLI 615 The Politics of Citizenship in Canada
POLI 628 Ethics and Values in Public Policy Making
POLI 633 Economic Theory for Public Policy
POLI 645 Indigenous Peoples and the State
POLI 646 History of Thought in Political Economy
POLI 648 Feminist Critiques of Public Policy
POLI 649 Gender and International Politics
POLI 650 Mass Communication and Public Policy Making
POLI 652 Science, Technology and Power
POLI 654 The State: A Conceptual and Historical Inquiry
POLI 656 The Market and Public Policy
POLI 658 Culture, Politics and Public Policy
POLI 685 Special Topics in Public Policy and Social and Political Theory
POLI 695 Directed Studies
GEOG 650 The Geography of Attitudes and Values

International Public Policy and Administration

POLI 603 Global Systems Theory
POLI 608 Globalization and Regional Integration
POLI 612 Public Policy and Business Cycles
POLI 614 Political Economy of Advanced Industrial Nations
POLI 616 Foreign Policy Making
POLI 621 Political Leadership and Decision Making
POLI 647 International Human Security
POLI 649 Gender and International Politics
POLI 656 The Market and Public Policy
POLI 659 International Organizations
POLI 662 International Political Economy
POLI 687 Special Topics in International Public Policy and Administration
POLI 695 Directed Studies

Political Economy and Public Policy

POLI 608 Globalization and Regional Integration
POLI 610 Economic Policy After Keynes
POLI 612 Public Policy and Business Cycles
POLI 614 Political Economy of Advanced Industrial Nations
POLI 633 Economic Theory for Public Policy
POLI 640 Business and Public Policy
POLI 646 History of Thought in Political Economy
POLI 652 Science, Technology and Power
POLI 656 The Market and Public Policy
POLI 662 International Political Economy
POLI 689 Special Topics in Political Economy and Public Policy
POLI 695 Directed Studies
GEOG 630 Environmental Change and Public Policy
GEOG 640 Urban Space and the Public Interest

Comparative Public Policy

POLI 604 Comparative Public Policy
POLI 611 Judicial Politics and Policy
POLI 614 Political Economy of Advanced Industrial Nations
POLI 622 Comparative Public Administration
POLI 627 Comparative Welfare States
POLI 629 Critical Perspectives in Development
POLI 637 Democracy and Regime Change
POLI 643 Rational and Public Choice
POLI 654 The State: A Conceptual and Historical Inquiry
POLI 657 Nationalism and Ethnicity
POLI 681 Special Topics in Comparative Public Policy
POLI 695 Directed Studies

Geography and Public Policy

GEOG 601 Geography and Public Policy
GEOG 602 Research Seminar
GEOG 603 Administration and Territory
GEOG 610 Special Topics in Geography and Public Policy Issues
GEOG 621 Special Topics in Geography and Public Policy Issues
GEOG 625 Readings in Geography and Public Policy
GEOG 626 Readings in Geography and Public Policy
GEOG 630 Environmental Change and Public Policy
GEOG 640 Urban Space and the Public Interest
GEOG 650 The Geography of Attitudes and Values
GEOG 660 Immigration, Demographic Change and Canadian Public Policy

Extended Research Essay, Internship with Research Paper, Thesis Proposal, Thesis

POLI 691 **Extended Research Essay** (6 credits)
POLI 693 **Internship with Research Paper** (15 credits)
POLI 694 **Thesis Proposal** (3 credits)
POLI 696 **Master's Thesis** (21 credits)

Courses

All courses listed are one-term, 3-credit courses unless otherwise indicated. Some courses are offered in French.
Political Science

POLI 600 Public Policy and the Governmental Process in Canada
The course is designed to familiarize students with the structures and processes of policy-making in Canadian government. Particular attention is given to theories of public policy, the role of key institutions and agencies in the formulation and analysis of policy, and recent organizational developments in the executive-bureaucratic arena.

POLI 602 Public Policy and the Governmental Process in Québec
Discussions and papers are about how public policy is made and implemented in the government process in Québec.

POLI 603 Global Systems Theory
A conceptual and methodological study of global politics emphasizing the interrelations among social, economic, and political factors. Global models are constructed and analyzed in order to predict and explain world structures and processes.

POLI 604 Comparative Public Policy
This course compares major tendencies in policy development in both advanced and not-so-advanced industrial nations. As the options for pursuing unique policies have been reduced for many countries, the course explores common approaches to policy-making in such areas as taxation, environment, privatization and the welfare state programs.

POLI 605 Environmental Law
This course introduces students to environmental law from the viewpoint of the scientific, political and economic issues underlying environmental conflicts pertaining to air and water pollution, toxic substances, solid waste, and hazardous waste disposal. The course provides an overview of issues such as statutory, regulatory and case analysis, liability, natural resource damages, settlement strategies, due diligence and cleanup standards and technologies. Canadian public policy and the role of government as policy-maker/regulator

are discussed with comparative legislation, policy and management on the US and international fronts. *Prerequisite*: Permission of the Political Science Graduate Program Director.
Note: Descriptions of other suitable courses may be found in the Graduate Calendar listings for the Departments of Biology, Chemistry & Biochemistry, Geography, Planning and Environment, Political Science and Building, Civil & Environmental Engineering.

POLI 606 Policy Making and the National Purpose in Canada
This course focuses upon the American challenge to Canadian independence in the economic, cultural, defence and other spheres, and examines policy initiatives taken by Canadian governments and the various proposals advanced by nationalist groups to meet this challenge.

POLI 608 Globalization and Regional Integration
A study of the long range historical tendencies towards large and complex interdependent organizations in the post industrial world. These trends juxtapose the regional confederation of the European community as well as the rising trade blocs of North America and the Pacific, with the development of a single political economic and cultural super-system of global scope.

POLI 610 Economic Policy After Keynes
This course introduces students to the controversy surrounding the economics of Keynes and the implications of his work for the current problems of unemployment and growth. Interpretations of Keynes are explored in the context of the current eclipse of Keynesianism in public policy circles.

POLI 611 Judicial Politics and Policy
This course considers the increased policy-making functions of Supreme Courts in systems that have statutory and entrenched bills of rights. By focusing on the interaction between courts and legislatures, and the increasing use of litigation strategies by interest groups, the implications of public policy in a rights context are examined.

POLI 612 Public Policy and Business Cycles
This course explores the public policy of managing the business cycle. The emphasis is on both the theoretical literature associated with modern notions of managing the economic cycle and on applied case studies. The focus is both Canadian and comparative.

POLI 614 Political Economy of Advanced Industrial Nations
The course provides an overview of the scholarly debate and research on political economy issues considered central to an examination of the political economy of advanced countries.

POLI 615 The Politics of Citizenship in Canada
This course examines key debates in the study and practice of citizenship in Canada. It explores the different forces which are transforming our understanding of citizenship, including globalization, nationalism, welfare state reform, international migration, and multiculturalism. Topics include citizenship and social exclusion; social rights and the welfare state; and economic citizenship, employment and social identity.
Note: Students who have received credit for this topic under POLI 685J may not take this course for credit.

POLI 616 Foreign Policy Making
This course deals with concepts, frameworks and theories of foreign policy process and their application to Canada and other selected states.

POLI 618 Canadian Public Administration
Discussion is directed towards an understanding of public administration in the Canadian federal setting. Some of the main problems of public administration are related to important changes which have taken place over the last twenty years and which are continuing to take place.

POLI 621 Political Leadership and Decision Making
This course considers the ways political actors attempt policy and institutional changes through an examination of leadership skills and decision making styles. It considers the philosophical treatments by Plato and Machiavelli and the relationship between morality and leadership by analyzing modern leadership within a constrained constitutional context.
Note: Students who have received credit for this topic under POLI 687M may not take this course for credit.

POLI 622 Comparative Public Administration
A comparative study of the public administration systems in various western countries with emphasis on a comparison vis-à-vis the Canadian federal system.

POLI 624 Public Administration of Intergovernmental Affairs
This course deals with intergovernmental affairs that have become a significant part of the policy process in many countries. An analysis of power relations in the federal state, both in institutional and societal terms, will be a primary focus of this course. The Canadian case will serve as the main area of inquiry.

POLI 627 Comparative Welfare States
This seminar examines various explanations (namely, class and interests, institutions, and gender) for the origins of the welfare state in different political settings. It analyzes typologies developed to conceptualize welfare state regimes and examines how globalization and notions of citizenship are

influencing the welfare states of different countries. It ends with an analysis of developments in the Canadian welfare state.

POLI 628 Ethics and Values in Public Policy Making
An issues-oriented seminar focusing on technology and ethics in areas ranging from environmental and cultural policy to questions raised by feminist critiques of technologies of reproduction. The seminar examines a series of theoretical perspectives on the meaning and destiny of technological society.

POLI 629 Critical Perspectives in Development
This course examines key debates surrounding the concept and the politics of development in the 'less developed' world with a particular emphasis on institutional structures, such as the state, the market and non-governmental organizations, through which development has been pursued.
Note: Students who have received credit for this topic under POLI 687K may not take this course for credit.

POLI 630 0rganizational Theory
The objective of this course is to offer an overview of the recent developments in organizational theory that can be used to explain the impact of the administrative state on public policy. Topics such as the functioning of organized anarchies, processes of institutionalization, the development of organizational cultures and the new economics of organization are covered.

POLI 633 Economic Theory for Public Policy
This course is designed to introduce students to microeconomic and macroeconomic principles that underlie public policy. The emphasis is on current theoretical debates and their impact on policy decisions.

POLI 634 Policy Analysis and Program Evaluation
This course focuses upon methods of assessing consequences of public policies. The main purpose of the course is to allow students to survey evaluation research in political science and to present research designs that will enable them to make plausible assumptions about the outcome of governmental programs in the absence of experimental control.

POLI 636 Theories of Public Policy and Public Administration
The course explores the diverse intellectual and ideological origins of Public Administration and Public Policy. The focus is on the comparative and critical analysis of the theoretical models under study. Students are encouraged to think analytically and to apply theoretical frameworks to their own empirical enquiries.

POLI 637 Democracy and Regime Change
This seminar examines the various definitions and understandings of democratic and authoritarian regimes and the principal moments of regime

change (breakdown, transition, post-transition, and consolidation). It focuses on institution-building, the actors involved in the process of regime change and the political economy of transitions.
Note: Students who have received credit for this topic under POLI 687B may not take this course for credit.

POLI 640 Business and Public Policy
The primary objective of this course is to explore the complex inter-relationships among business, government and other interest groups active in the public policy process. The focus of the course is on public policy formulation and implementation and the relationship between corporations and governments.

POLI 643 Rational and Public Choice
This course deals with understanding the micro-analytical foundations of individual and group behaviour in political life. It introduces students to the main concepts, theorems and their applications in positive analytical politics including game theory, spatial modeling and institutional analysis.
Note: Students who have received credit for this topic under POLI 687C may not take this course for credit.

POLI 644 Research Methods
This course introduces students to the logic and methodology of Political Science research and public policy analysis.

POLI 645 Indigenous Peoples and the State
This course examines the political and administrative context in which Indigenous Peoples and the state coexist as well as the tensions between European and Indigenous modes of governance. It focuses on the evolution of institutions and policies regulating this relationship, and the governance strategies developed consistent with Indigenous traditions. The Canadian case serves as the focus but other countries may be considered.
Note: Students who have received credit for this topic under POLI 683M may not take this course for credit.

POLI 646 History of Thought in Political Economy
This course presents a survey of the major ideas which have shaped the various approaches to political economy from the classical theorists to twentieth century thinkers. The historical and contemporary influence of these ideas on public policy is evaluated.

POLI 647 International Human Security
An introduction to the growing literature and controversies surrounding the concept of 'human security' in international politics, applied specifically to the Canadian foreign policy context. Examined actors include states, non-governmental organizations, international institutions, and 'civil society'.

Note: Students who have received credit for this topic under POLI 687O may not take this course for credit.

POLI 648 Feminist Critiques of Public Policy
This issues-oriented seminar examines the relationship of gender, ideology, and public policy. Focusing on feminist critiques of state and power as inherently masculinist, the seminar discusses previously excluded questions: violence against women, abortion, and gender equity in the workplace.

POLI 649 Gender and International Politics
The study of gender has gained a new prominence in comparative and international politics in recent years. This seminar not only examines debates regarding gender and the state, war, nationalism, and political transition, but also considers debates surrounding how gender should be approached theoretically and methodologically in international studies.
Note: Students who have received credit for this topic under POLI 687L may not take this course for credit.

POLI 650 Mass Communication and Public Policy Making
This course focuses on problems of interactions between policy-makers, media experts and opinion-leaders in creating new integrated information systems in different cultural settings. The main topics for discussion are policy ideologies, development scenarios, media systems and information societies in America, Japan, Europe, and former communist regimes.

POLI 652 Science, Technology and Power
This course introduces students to the growing field of science policy analysis. It provides an overview of the theoretical approaches and analytical tools used in the area and critically discusses various policy mechanisms now in place as well as current and emerging issues.

POLI 654 The State: A Conceptual and Historical Inquiry
This course examines the contested concept of the state. It considers among other matters: understandings of public life in which the concept of state was not employed as a frame of reference; Hegelian, Weberian and neo-Marxist theories of the state; the theory of the autonomy of the state and its implications for public policy and administration; thinking about politics, policy, and administration beyond the horizons of the state.

POLI 656 The Market and Public Policy
The collapse of the Keynesian consensus in Western capitalist economies and of communism in Eastern Europe has been marked by a renewed commitment to laissez-faire ideology. The relationship between the market and public policy brought about by this shift is analyzed from a theoretical, historical, and comparative perspective.

POLI 657 Nationalism and Ethnicity
This seminar discusses the nature, dynamics and consequences of nationalism. The emphasis is placed on presenting and discussing various theoretical understandings of identity and nationalist mobilization. It examines conceptual issues relating to the study of nationalism, namely the nature, origins and characterizations of nations and nationalism and the strategies for regulation of nationalist conflict.
Note: Students who have received credit for this topic under POLI 687H may not take this course for credit.

POLI 658 Culture, Politics and Public Policy
An examination of contemporary cultural policy in areas ranging from cinema T.V., and recording to the visual arts. While focusing specifically on Canadian cultural policy, the seminar adopts a broadly comparative perspective on culture, politics, and public policy.

POLI 659 International Organizations
This course explores the role of international organizations, institutions, and regimes in world politics. It surveys theoretical debates and assesses the capacity of international organizations to promote multilateral cooperation in areas such as international security and political economy. It assesses the decision-making processes, effectiveness, and democratic accountability of international organizations and their significance for Canadian foreign policy and world order.
Note: Students who have received credit for this topic under POLI 687J may not take this course for credit.

POLI 662 International Political Economy
This covers the principal theories and practices of macro economics in the global arena of the modern world; including the role of transnational corporations, North-South confrontation, foreign trade, transfer of technology, and intergovernmental organizations such as: UNCIAD, OECD, IBRD and GATT.

POLI 681 Special Topics in Comparative Public Policy

POLI 683 Special Topics in Public Administration and Decision Making

POLI 685 Special Topics in Public Policy and Social and Political Theory

POLI 687 Special Topics in International Public Policy and Administration

POLI 689 Special Topics in Political Economy and Public Policy

POLI 691 Extended Research Essay (6 credits)
The Extended Research Essay is a directed study supervised by a faculty member with whom a student completed a course in their area of concentration. This degree requirement builds on a term paper submitted at the graduate level in a concentration course and is considered to be a significant revision and extension of that paper.

POLI 693 Internship with Research Paper (15 credits)
The Internship is a four-month job placement in either the public or private sector. Students work with their faculty supervisor to prepare a written research paper which is presented in an oral examination. The internship research paper is an original theoretical work that comprises a series of policy recommendations that contribute to the policy process in Canada.

POLI 694 Thesis Proposal (3 credits)
This course is a directed study involving a comprehensive understanding of the literature in the area of research relevant to the thesis topic under the direction of a faculty supervisor. The written assignments involve a comprehensive literature review, annotated bibliography and research design that culminate in a thesis proposal presented in an oral defence.

POLI 695 Directed Studies
Independent study in the area of concentration.

POLI 696 Master's Thesis (21 credits)

For **Geography** course descriptions please see the ***Geography, Planning and Environment*** section of the calendar.

Cognate Courses

Students may enroll in cognate courses in the John Molson School of Business and in the Departments of Communication Studies, Economics, Education, and Sociology and Anthropology in the Faculty of Arts and Science. Permission of the Graduate Program Directors of both the Master of/Magisteriate in Arts (Public Policy and Public Administration) and the second department is required.

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Tel.: 848-2424 ext. 2205; Fax: 848-4523
e-mail: black@vax2.concordia.ca
website: http://psychology.concordia.ca

Psychology

Faculty

Distinguished Professors Emeriti: Zalman Amit, Tannis Arbuckle-Maag, Alex Schwartzman.

Professors: Philip C. Abrami *(E),* Shimon Amir, William M. Bukowski, June Chaikelson (*Chair)*, Anna-Beth Doyle, Nina Howe *(E),* Dorothy Markiewicz *(Joint with the Department of Applied Human Sciences)*, Jim Pfaus, Diane Poulin-Dubois, Dolores Pushkar, Norman Segalowitz, Lisa Serbin, Peter Shizgal, Jane Stewart, Michael von Grünau, Barbara Woodside.

Associate Professors: Andrew Chapman *(M.A. Program Director)*, Michael Conway, Michel Dugas, Rick Gurnsey, Paul Hastings, James E. Jans, Rex Kline, Jean Roch Laurence (*Ph.D. Program Director)*, Karen Li, Sydney Miller, *(Director of Clinical Training)*, Dave Mumby, Olga Overbury, Virginia Penhune, Natalie Phillips, Dale Stack.

Assistant Professors: Andreas Arvanitogiannis, Wayne Brake, Roberto de Almeida, Mark Ellenbogen, David Forman, Constantina Giannopoulos, Jennifer McGrath, Adam Radomsky, Andrew Ryder, Uri Shalev, Carsten Wrosch.

Adjunct Faculty: Hallie Frank, Alain Gratton, Gabriel Leonard, Pierre-Paul Rompré, Roy Wise.

Clinical Consultants: Yves Beaulieu, Marie-France Boudreault, Ian Bradley, Sam Burstein, Hélène Dymetryszyn, Richard Karmel, Michael Petrides, Zeev Rosberger, Debbie Sookman, Howard Steiger, Allen Surkis, Viviane Sziklas, Cam Zacchia.

Clinical Supervisors: Mélanie Archambault, Fern Azima, Lennie Babins, Susan Barza, Jeanne Beaudry, Karina Béland, Claude Bélanger, Nathalie Belda, Sophie Bergeron, Johan Binette, Irv Binik, Hildegard Brack, William Brender, Sophie Brière, Tom Brown, Ken Bruce, Yves Careau, Tinaz Chinoy, Lois Colle, Mike Coward, Sylvie Daigneault, Elaine De Guise, Violaine de Kimpe, Paule Delisle, Nathalie Desormeaux, Nathalie Dinh, Nathalie Drouin, Lucie Fortin, Ann Gamsa, Carole Gendron, Marc-André Généreux, Constantina

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(E) Faculty member from the Department of Education participating in the Psychology Graduate Program.

Giannopoulos, Sylvie Goulet, Judy Gradinger, Rachel Green, Linda Greenberg, Pierre Grégoire, Corinne Gutman, Esther Handelman, Geneviève Janveau-Brennan, Jasmine Joncas, Marilyn Jonesgotman, Dennis Kalogeropoulos, Nora Kelner, Leslie Klein, Nathan Kuperstok, Constance Lalinec-Michaud, Henry Lavigueur, François Lefebvre, Judith Le Gallais, Gabriel Leonard, Stephanie Leonard, Nathalie Liboiron, Mark Liflan, Helena Lobato, Robert Loveless, Solange Marchildon, Suzanne Marcotte, Stephanie Margolese, Chantale Martel, Valentin Mbekou, Nicole McCabe, Muriel Michel, Ali Mindel, Daniel Moisan, Richard Montoro, Linda Moxley-Haegert, Carolyn Nelham, Sylvian Néron, Margaret O'Byrne, Zbigniew Pleszewski, Nancy Poirier, Cecile Quirouette, Sandra Rafman, Maria Ramsay, Marie-Josée Rivard, David Ross, Christina Saltaris, Annie Sapin-Leduc, Joêlle Sayegh, Liliane Sayegh, Alexandra Schiavetto, Carol Schopflocher, Connie Scuccimarri, Esther Sidoli-Leblanc, Maxine Sigman, Thérèse Simard, David Sinyor, Lilian Spector, Michael Spevack, Julie St.-Amand, Guylaine St-Pierre, Maria Sufrategui, Angeles Toharia, Mary Tsonis, Monica Chantal Vasquez, Debra Weissberg, Ruta Westreich, Sepi Zargarpour, Phyllis Zelkowitz.

Programs

The Department of Psychology offers the degrees of Doctor of/Doctorate in Philosophy (Psychology) and Master of/Magisteriate in Arts (Psychology). As well, the Certificate in Clinical Psychology is offered for students enrolled in the Master of/Magisteriate in Arts (Psychology) (Research & Clinical Training) degree program.

Program Objectives

Graduate training in psychology at Concordia is primarily for students intending to obtain the Ph.D. degree in our program. At the beginning of graduate training, students typically pursue an M.A. in Psychology and then proceed to complete the Ph.D. in Psychology. Students affiliate at admission with either the Research or the Research & Clinical Training Options. The two options have the same research requirements; the Research & Clinical Training Option also includes training in the delivery of psychological services. Graduate training in Psychology at Concordia has two unique features: its selection of areas of research specialization and the availability of clinical training regardless of research specialization area.

Research Areas in Psychology

Programs of individual students differ in terms of areas of research specialization. Each entering student selects a research supervisor who is affiliated with one or more of the areas of specialization outlined below, and enrolls in laboratory seminars and area tutorials organized around the area(s) of specialization. Each area has been defined so as to include a broad range of

psychologists' activities with respect to the problem, from pure research to applications. Students are expected to master both the basic and applied literature in their particular area. Programs of individual students vary in the relative emphasis on basic and applied research. The areas of specialization offered by the department are listed below.

Behavioural Neuroscience. The study of the neural basis of reward and decision making, learning and memory, drug dependence, feeding, reproductive behaviour, and biological rhythms. Currently researchers are focusing on the commonalities and differences between neural and hormonal mechanisms underlying food intake, self-administration of drugs and brain stimulation reward, the role of conditioning in sexual and sex-related behaviour, the neurochemical control of maternal behaviour, the interaction between primary and subordinate circadian oscillators in the brain and the structural foundations of learning and memory, particularly the role of the cerebral cortex.

Clinical and Health Research. The study of neuro-physiological, biological and social factors associated with particular behaviour problems and their remediation, and of the origins, nature, determinants and treatment of the various disorders. The study of the psychological processes important in developing and maintaining health. Current clinical research with children and adolescents focuses on developmental psychopathology, including risk factors for adult psychopathology and precursors of particular clinical symptoms. Research with adults examines the etiology of anxiety and depression and the relative effectiveness of therapies in controlling them. Current health research includes: the role of stress, coping variables, personality, and attitudinal factors as they influence health, illness and pain perception; the role of illness as a transition from healthy aging into frail old age; the experience, interpretation of and derived meaning of major illness by the elderly; and the impact of various risk factors and disease states on cognitive function, and of cognition and suggestion on pain.

Human Development and Developmental Processes. The study of normal and atypical patterns of human development across the lifespan. Research on the origins, nature, determinants, and interaction of cognitive, emotional, perceptual and motor abilities; personality characteristics; social skills. Research programs on childhood and adolescence include: socio-emotional and cognitive processes in normal and high risk infants and young children; family and peer relations; sex differences and sex-role socialization, and predictors of adjustment, in particular across developmental transitions. Research programs on aging examine adaptation to age-related changes and transition, lifestyle factors that maintain competence in elderly women and men, and changes and continuity in cognitive abilities, language, social functioning, subjective well being, and personality.

Cognitive Science. The study of sensory, perceptual and cognitive processes and their development, leading to the perception, responding to and comprehension of visual, auditory and verbal stimuli. Research programs in perception include perception of motion, depth, texture and color, spatial vision, and visual search, with special emphasis given to the role of attention. Research programs in cognition include studies of attention, memory, language, concepts and categorization, reading, skill acquisition, second language skills, and musical performance skills. The developmental aspects of cognition currently investigated include the origins of a theory of mind in infancy and early lexical and conceptual development in monolingual and bilingual children. Research programs in cognitive neuropsychology give special emphasis to the role of attentional strategies, to auditory information in perceptual and cognitive processing, the nature of cognitive deficits, neuropsychological mechanisms and thought disorders, using neuropsychological methods such as brain wave recording and brain imaging. Research is based on normal as well as clinical, neuropsychological and other special populations.

Clinical Training

The Research & Clinical Training Option is accredited by the Canadian[1] and American[2] Psychological Associations. Students in any area of research specialization may follow the Research & Clinical Training Option. Clinical coursework and practica, including the Certificate in Clinical Psychology, are begun concurrently with the M.A. requirements, and continue as part of the Ph.D. degree.

Specific Information about all Programs

Admission Requirements. Admission to the Ph.D. degree requires a master's degree in psychology from a recognized university. Admission to the M.A. degree requires an honours degree in psychology or its equivalent. Enrolment in these programs is limited in part by the availability of research supervisors and, for the Research & Clinical Training Option, by space in that option. Applicants are selected on the basis of past academic record, letters of recommendation, the results of the Graduate Record Examination (optional, but highly recommended), and the relevance of their proposed research to the research expertise of the faculty. Students successfully completing their master's program in psychology at Concordia University need submit only an application form and letters of recommendation when applying for the doctoral

[1] Accreditation Panel of the Canadian Psychological Association (CPA), 141 Laurier Avenue West, Suite 702, Ottawa, Ontario K1P 5J3
[2] Committee on Accreditation, c/o Office of Program Consultation and Accreditation – Education Directorate, American Psychological Association (APA), 750 First Street, N.E., Washington, DC 20002-4242

degree. Psychology graduate courses are not open to graduate-level independent students, except in specific circumstances as defined by the department.

Application Deadline. Applications must be completed and received by January 3 for admission the following September.

Financial Assistance. The Department of Psychology employs graduate students as teaching assistants in undergraduate courses in research methods and statistics. Students who wish such employment should indicate their interest on the application form. In addition, students should apply in the autumn preceding their application for all national, provincial, and university scholarships or fellowships for which they are eligible. Information may be obtained from the Graduate Awards Office of the School of Graduate Studies. Many research supervisors also employ their students as research assistants.

Undergraduate Teaching. Students are encouraged to take opportunities to assist in undergraduate teaching. The department treats such teaching as part of the student's learning experience. Discussion of aims and techniques as well as advice and criticism will be involved as part of the training that students obtain as teaching assistants.

Colloquia. All students are expected to attend departmental colloquia.

Language Requirements. Although no formal language courses or examinations are required, students intending to work in Quebec are strongly encouraged to develop a working knowledge of French. Students who plan to seek admission to the Order of Quebec Psychologists (OPQ) are advised that Article 46 of the professional code of the Province of Quebec states that a working knowledge of French is required for professional certification.

Academic Regulations

1. **GPA Requirement.** The academic progress of students is monitored on a periodic basis. To be permitted to continue in the program, students must obtain a cumulative grade point average (GPA) of 3.00 based on a minimum of 12 credits. Students whose GPA falls below 3.00 are considered to be on academic probation during the following review period. Students whose GPA falls below 3.00 for two consecutive review periods are withdrawn from the program.

2. **C Rule.** Students receiving a grade of *C* in two courses will have their status within the program reviewed by the Graduate Committee. Normally a *C* in two courses is grounds for withdrawal. In cases of extenuating circumstances probationary continuation in the program will be considered.

3. **F Rule.** Students receiving a failing grade in the course of their studies will have their status within the program reviewed by the Graduate Committee. Normally a failing grade is grounds for withdrawal. In the case of withdrawal, students may apply for readmission.

4. **Time Limits.** All work for the M.A. degree for full-time students must be completed within 12 terms (4 years) from the time of initial registration in the program at Concordia University; for part-time students the time limit is 15 terms (5 years).
   All work for the Certificate in Clinical Psychology must be completed within 12 terms (4 years) from the time of initial registration in the program at Concordia University.
   All work for the Ph.D. degree must be completed within 18 terms (6 years) of full-time study or 24 terms (8 years) of part-time study.

5. **Graduation Requirement.** In order to graduate, students must have a cumulative GPA of at least 3.00.

Master of/Magisteriate in Arts (Psychology)

Requirements for the Degree

1. **Residence.** The minimum period of residence is one year (3 terms) of full-time study, or the equivalent in part-time study.

2. **Credits.** A fully-qualified candidate is required to complete a minimum of 45 credits consisting of course work and thesis as follows: PSYC 601 (3 credits); PSYC 644, 645, 646, or 647 (3 credits); PSYC 714 (6 credits); 3 credits selected in consultation with the thesis supervisor from among PSYC 700, 716, 721, 724, 725, 726, 727 or 734; and PSYC 690 (30 credits).

   Students affiliated with the Research & Clinical Training Option will take PSYC 700 and will concurrently complete the courses indicated under Graduate Certificate in Clinical Psychology and under the Ph.D. (Research & Clinical Training) as taken during the M.A. years.

   It is recommended that students also take Multivariate Statistics 734 or equivalent.

3. **Thesis.** The student must submit a thesis on a topic relating to one or more of the areas of research specialization of the department (Behavioural Neuroscience, Clinical and Health Research, Human Development and Developmental Processes, and Cognitive Science) chosen in consultation with his or her thesis supervisor. Topics must be approved by a committee of the department. The thesis shall be read and graded by the student's thesis director and by at least two other scholars, one of whom may be an outside

examiner. For purposes of registration, this work will be designated as PSYC 690: Research and Thesis (30 credits).

4. **Thesis Examination.** The student must defend the thesis and demonstrate knowledge of the field in which the thesis falls in an oral examination before a committee of the department.

Graduate Certificate in Clinical Psychology

The Graduate Certificate in Clinical Psychology provides students enrolled for the M.A. in Psychology (Research & Clinical Training) with clinical coursework and practica qualifying them for further clinical training provided in the Ph.D. in Psychology (Research & Clinical Training).

Admission Requirements

The Certificate in Clinical Psychology is open only to students enrolled in the M.A. or Ph.D. in Psychology (Research & Clinical Training).

Requirements for Completion

1. **Credits**. The Certificate consists of 6 courses (15 credits).

2. **Courses**. Psychology 701 Models of Assessment I
   Psychology 702 Models of Assessment II
   Psychology 705 Therapy Practicum I
   Psychology 706 Assessment Practicum I (1 credit)
   Psychology 707 Assessment Practicum II (2 credits)
   Psychology 708, 709 or 710 Therapy Practicum II

Doctor of/Doctorate in Philosophy (Psychology)

Requirements for the Degree

1. **Residence.** The minimum residence requirement is two years (6 terms) of full-time study beyond the M.A. degree, or the equivalent in part-time study.

2. **Credits.** A fully-qualified candidate is required to complete a minimum of 90 credits, including Core courses and elective Options.

   Core Courses:

   a. Ph.D. Year I: PSYC 801 Research Seminar I (3 credits); PSYC 880 Comprehensive Examination (non-credit); PSYC 721, 724, 725, 726 or 727 Special Topics seminar (3 credits).

b. Ph.D. Year II: PSYC 802 Research Seminar II (3 credits); PSYC 721, 724, 725, 726 or 727 Special Topics seminar (3 credits).

c. Ph.D. Year I and II: PSYC 890 Ph.D. Thesis (60 credits).

Options:

I. Research Option:
In addition to the core courses, students select from among the following courses:

a. Ph.D. Year I: PSYC 844, 845, 846, or 847 Area Seminar II (3 credits).

b. Ph.D. Year I or II: 15 credits from PSYC 734 Multivariate Statistics (3 credits, may be taken during the MA years), PSYC 721, 724, 725, 726, or 727 Special Topics seminar (3 credits, may be chosen up to 3 times as an elective option provided topic differs), PSYC 700 Psychopathology (3 credits), PSYC 701 Models of Assessment I (3 credits), PSYC 714 Central Topics in Psychology (6 credits), PSYC 716 Advanced Human Development, PSYC 850 Practicum in Experimental Techniques (3-6 credits), PSYC 851 Teaching of Laboratory Techniques (3 credits).
It is recommended that students who have not done so previously, take three credits of Multivariate Statistics PSYC 734 or equivalent.

II. Research and Clinical Training Options:
In addition to the core courses, students select from the following courses:

a. M.A. Year I: PSYC 734 Multivariate Statistics (3 credits).

b. MA Year II: PSYC 703 Models of Behaviour Change I (3 credits), PSYC 704 Models of Behaviour Change II (3 credits).

c. PhD Year I: PSYC 711, 712 or 713 Extramural Practicum I (non-credit).

d. PhD Year I or II: PSYC 720 Seminar on Professional and Ethical Issues (3 credits), PSYC 834 Advanced Clinical Seminar I (3 credits), PSYC 835, 836, or 837 Advanced Clinical Seminar II (3 credits), PSYC 823, 824, or 825 Therapy Practicum III (3 credits).

e. PhD Year III or II/III: PSYC 885 Pre-doctoral Internship (Full-time for one year or half-time for two years) (non-credit).

At least one adult and one child client must be seen in the required practicum courses (Therapy Practicum II or III, Extramural Practicum I). All students following the Research & Clinical Training Option are expected to attend case conferences at the Applied Psychology Centre training clinic.

3. **Comprehensive Examination.** Students are required to write a comprehensive examination (PSYC 880) within 12 months of being admitted for the degree. The examination will be in two parts, one dealing with general issues and the other with the candidate's area of specialization.

4. **Thesis.** The research will be undertaken within one or more of the areas of research specialization of the department (Behavioural Neuroscience, Clinical and Health Research, Human Development and Developmental Processes, and Cognitive Science) under the supervision of a faculty member. The thesis is expected to make a significant contribution to the advancement of knowledge. The content and form of the thesis must be approved by a departmental committee prior to submission to the School of Graduate Studies. For purposes of registration, this work will be designated as PSYC 890: Research and Thesis (60 credits).

Courses

The following are 3-credit courses unless otherwise indicated.

PSYC 601 Statistical Analysis and Experimental Design
A detailed consideration of selected issues in Psychological statistics. Topics include parametric and non-parametric techniques, analysis of variance, power of statistical tests, and hypothesis testing.

PSYC 644 Clinical and Health Research Area Seminar I
A seminar in which current research of faculty and students in clinical and health psychology is presented and discussed.

PSYC 645 Cognitive Science Area Seminar I
A seminar in which current research of faculty and students in cognitive science is presented and discussed.

PSYC 646 Human Development Area Seminar I
A seminar in which current research of faculty and students in human development and developmental processes is presented and discussed.

PSYC 647 Behavioural Neuroscience Area Seminar I
A seminar in which current research of faculty and students in behavioural neuroscience is presented and discussed.

PSYC 690 Research and Thesis (30 credits)

PSYC 700 Psychopathology
This seminar deals with historical and current approaches to the study of behaviour disorders and problems of life adjustment in both adults and children, including critical evaluation of empirical findings in selected areas. Classification systems, including the current revision of the APA Diagnostic and Statistical Manual, are critically reviewed. *Prerequisite:* Undergraduate course in behaviour disorders or equivalent. Students with credit for PSYC 660 or 860 may not take this course for credit.

PSYC 701 Models of Assessment I
Cognitive and ability testing of children and adults. This course stresses the conceptual bases of ability testing, research results and their implications for test interpretation, and strengths and limitations of current test batteries for children and adults. Specific course content includes: a) measurement theory, including issues of test construction, reliability, validity, and evaluation; b) appropriate use and interpretation of specific cognitive assessment batteries (e.g. the Wechsler and Stanford-Binet scales for children and adults); and c) special assessment issues, including the testing of minorities and assessment-related ethical problems. A practicum in assessment techniques (PSYC 706) is typically taken in conjunction with this course. *Prerequisite:* PSYC 700; *Co-requisite:* PSYC 706 or permission of the Director of Clinical Training.

PSYC 702 Models of Assessment II
This course is a continuation of Assessment I, and focuses on the measurement of behaviour related directly to personality and/or behaviour disorders in both adult and child populations. Interviewing, projective techniques and structural (quantitative) tests of personality such as the MMPI and CPI are included. The course stresses the evaluation of assessment procedures in terms of reliability and validity issues, and focuses on the selection and use of assessment procedures for specific types of prediction. The course also stresses the integration of assessment procedures into treatment planning and evaluation. *Prerequisite:* PSYC 701; *Co-requisite:* PSYC 707 or permission of the Director of Clinical Training.

PSYC 703 Models of Behaviour Change I
Models of psychological intervention with both adults and children are examined with respect to: a) theoretical formulations and etiological assumptions; b) treatment objectives and strategies; c) issues related to the application of these models; d) the efficacy of treatment procedures, including general issues in outcome research. The major emphases are on behavioural and psychodynamic approaches. Among other topics, the ethics of therapeutic interventions are discussed. *Prerequisite*: PSYC 700.

PSYC 704 Models of Behaviour Change II
A continuation of PSYC 703 Models of Behaviour Change I.
Prerequisite: PSYC 703.

PSYC 705 Therapy Practicum I
Students participate in case supervision, observe and/or assist with clients in therapy, and attend case conferences at the Applied Psychology Centre. *Prerequisites or Co-requisites*: PSYC 700 and permission of the Director of Clinical Training.

PSYC 706 Assessment Practicum I (1 credit)
This course focuses on the practical applications of the material discussed in Models of Assessment I (PSYC 701). Students administer intellectual tests under supervision. Techniques for administration, interpretation and report-writing of specific test batteries suitable for adults and children are stressed. *Prerequisites or Co-requisites*: PSYC 701, 705 and permission of the Director of Clinical Training.

PSYC 707 Assessment Practicum II (2 credits)
This course focuses on the practical applications of the material discussed in models of Assessment II (PSYC 702). Students administer personality tests under supervision. Techniques for administration, interpretation and report writing of specific assessment test batteries suitable for adults and children are stressed. *Prerequisite:* PSYC 706, *Co-requisite:* PSYC 702, and permission of the Director of Clinical Training.

PSYC 708 Therapy Practicum II: General
The focus of this course is the practical applications of the material discussed in Models of Assessment II and Models of Behaviour Change I and II PSYC 702, 703 and 704. Students are responsible for the assessment and treatment of selected clients of the Applied Psychology Centre under faculty supervision. *Prerequisite or Co-requisites:* PSYC 703, 704, 706, 707 and permission of the Director of Clinical Training.

PSYC 709 Therapy Practicum II: Adult
The focus of this course is the practical applications of the material discussed in Models of Assessment II and Models of Behaviour Change I and II PSYC 702, 703 and 704. Students are responsible for the assessment and treatment of selected adult clients of the Applied Psychology Centre under faculty supervision. *Prerequisites or Co-requisites:* PSYC 703, 704, 706, 707 and permission of the Director of Clinical Training.

PSYC 710 Therapy Practicum II: Child
This focus of this course is the practical applications of the material discussed in Models of Assessment II and Models of Behaviour Change I and II PSYC 702, 703 and 704. Students are responsible for the assessment and treatment of

selected child clients of the Applied Psychology Centre under faculty supervision. *Prerequisites or Co-requisites:* PSYC 703, 704, 706, 707 and permission of the Director of Clinical Training.

PSYC 711 Extramural Practicum I: General (non-credit)
A four-month extramural practicum done under qualified supervisors in an applied setting approved by the department's internship committee, e.g., hospitals, clinics, schools, community and rehabilitation centres. *Prerequisites:* PSYC 701, 702, 703, 704, 706, 707 and permission of the Director of Clinical Training.

PSYC 712 Extramural Practicum I: Adult (non-credit)
A four-month extramural practicum with adult clients, done under qualified supervisors in an applied setting approved by the department's internship committee, e.g. hospitals, clinics, schools, community and rehabilitation centres. *Prerequisites:* PSYC 701, 702, 703, 704, 706, 707 and permission of the Director of Clinical Training.

PSYC 713 Extramural Practicum I: Child (non-credit)
A four-month extramural practicum with child clients, done under qualified supervisors in an applied setting approved by the department's internship committee, e.g., hospitals, clinics, schools, community and rehabilitation centres. *Prerequisites:* PSYC 701, 702, 703, 704, 706, 707 and permission of the Director of Clinical Training.

PSYC 714 Central Topics in Psychology (6 credits)
A general seminar dealing with basic theoretical and research issues in Psychology. Topics will be drawn from a wide range of areas in Psychology including perceptual and cognitive processes, learning, motivation, and psychopathology. Issues will be considered with respect to developmental, physiological and social approaches. Students who have credit for PSYC 602 may not take this course for credit.

PSYC 715 Vision and Audition
A seminar on physical, physiological and psychological aspects of visual and auditory perception with special emphasis on the comparison between normal and defective vision and hearing.

PSYC 716 Advanced Human Development
A seminar on theory and research in human development and developmental processes.
Subject matter will vary from term to term and from year to year. Students may re-register for this course, provided that the course content has changed. Change in content will be indicated by the letter following the course number.

PSYC 720 Seminar on Ethical and Professional Issues
In this biweekly seminar, ethical and professional issues in clinical psychology are considered through case presentations by students, faculty and guest clinicians. The ethical principles of national accrediting bodies and of the Order of Psychologists of Québec are reviewed.
Prerequisite or co-requisite: PSYC 834 or permission of the Director of Clinical Training.

PSYC 721 Special Topic Seminar
Advanced treatment of specialized research literature in an integrative or selected area of psychology outside the department's major areas of specialization. This course may be offered as a seminar, tutorial or directed reading course, or in any other format, subject to approval of the program director.
Subject matter will vary from term to term and from year to year. Students may re-register for this course, provided that the course content has changed. Change in content will be indicated by the letter following the course number.
Students with credit for PSYC 603 or 803 may take this course for credit only if the subject matter is different.

PSYC 724 Special Topics In Clinical and Health Psychology
Advanced treatment of specialized research literature in an area of clinical and/or health psychology. This course may be offered as a seminar, tutorial or directed reading course, or in any other format, subject to approval of the program director.
Subject matter will vary from term to term and from year to year. Students may re-register for this course, provided that the course content has changed. Change in content will be indicated by the letter following the course number.
Students with credit for PSYC 603, 721, 803, or 805 may take this course for credit only if the subject matter is different.

PSYC 725 Special Topics In Cognitive Science
Advanced treatment of specialized research literature in an area of cognitive science. This course may be offered as a seminar, tutorial or directed reading course, or in any other format, subject to approval of the program director.
Subject matter will vary from term to term and from year to year. Students may re-register for this course, provided that the course content has changed. Change in content will be indicated by the letter following the course number.
Students with credit for PSYC 603, 721, 803, or 805 may take this course for credit only if the subject matter is different.

PSYC 726 Special Topics In Human Development
Advanced treatment of specialized research literature in an area of human development and developmental processes. This course may be offered as a seminar, tutorial or directed reading course, or in any other format, subject to approval of the program director.

Subject matter will vary from term to term and from year to year. Students may re-register for this course, provided that the course content has changed. Change in content will be indicated by the letter following the course number.
Students with credit for PSYC 603, 721, 803, or 805 may take this course for credit only if the subject matter is different.

PSYC 727 Special Topics In Behavioural Neuroscience
Advanced treatment of specialized research literature in an area of behavioural neuroscience. This course may be offered as a seminar, tutorial or directed reading course, or in any other format, subject to approval of the program director.
Subject matter will vary from term to term and from year to year. Students may re-register for this course, provided that the course content has changed. Change in content will be indicated by the letter following the course number.
Students with credit for PSYC 603, 721, 803, or 805 may take this course for credit only if the subject matter is different.

PSYC 734 Multivariate Statistics
Building upon material presented in PSYC 601, this course covers multivariate procedures, includes MANOVA, cluster analysis, canonical correlation, factor analysis, structural equation modelling, and multilevel modelling. *Prerequisite:* PSYC 601.
Note: Students who have received credit for PSYC 730 or PSYC 732 may not take this course for credit.

PSYC 801 Research Seminar I
A seminar attended by all doctoral students in which specific research proposals and related theoretical issues and methodological problems are presented for discussion by students and participating faculty.

PSYC 802 Research Seminar II
A continuation of PSYC 801.

PSYC 823 Therapy Practicum III: General
Advanced students are expected to begin to define clinical interests and treatment methods consonant with their career goals. They receive the appropriate clinical experience and supervision in this practicum (e.g., working with children, adolescents, adults, working with clients who present particular types of problems). *Prerequisites:* PSYC 708 (or 709 or 710), 711 (or 712 or 713). *Prerequisites or Co-requisites:* PSYC 834, 835 (or 836 or 837), and permission of the Director of Clinical Training.

PSYC 824 Therapy Practicum III: Adult
Advanced students are expected to begin to define clinical interests and treatment methods consonant with their career goals. They receive the appropriate clinical experience and supervision in this practicum working with

adult clients, e.g. working with a particular orientation and/or with particular types of problems. *Prerequisites:* PSYC 708 (or 709 or 710), 711 (or 712 or 713). *Prerequisites or Co-requisites:* PSYC 834, 835 (or 836 or 837), and permission of the Director of Clinical Training.

PSYC 825 Therapy Practicum III: Child
Advanced students are expected to begin to define clinical interests and treatment methods consonant with their career goals. They receive the appropriate clinical experience and supervision in this practicum working with child clients and families, e.g. working with a particular orientation and/or with particular types of problems. *Prerequisites:* PSYC 708 (or 709 or 710), 711 (or 712 or 713). *Prerequisites or Co-requisites:* PSYC 834, 835 (or 836 or 837), and permission of the Director of Clinical Training.

PSYC 826 Therapy Practicum IV: General
A specialized practicum for advanced students involving clinical experience under supervision. *Prerequisites:* PSYC 823 (or 824 or 825) and permission of the Director of Clinical Training.

PSYC 827 Therapy Practicum IV: Adult
A specialized practicum for advanced students involving clinical experience with adult clients under supervision. *Prerequisites:* PSYC 823 (or 824 or 825) and permission of the Director of Clinical Training.

PSYC 828 Therapy Practicum IV: Child
A specialized practicum for advanced students involving clinical experience with child clients under supervision. *Prerequisites:* PSYC 823 (or 824 or 825) and permission of the Director of Clinical Training.

PSYC 834 Advanced Clinical Seminar I
This seminar provides an advanced treatment of issues in current psychological theory and research that are relevant to clinical practice, e.g., causal models and their assumptions, legal and ethical issues, classification by state, trait, and situational context; brain-behaviour relations. The aims are to foster in students a) regular review of clinically relevant literature; b) a critical perspective regarding current clinical practices; and c) guidelines and criteria for optimal assessment and treatment decisions tailored to the needs of clients. *Prerequisites:* PSYC 711 (or 712 or 713), 708 (or 709 or 710), and permission of Director of Clinical Training.

PSYC 835 Advanced Clinical Seminar II: Adult
The seminar provides an advanced analysis of issues in the assessment and treatment of behaviour disorders in adulthood. Prototype cases are presented for illustrative discussion of particular clinical issues, e.g. indicators of risk for suicide, homicide, and psychosis; imagery and dreams in psychological treatment; stress-related physical disorders; anxiety-spectrum disorders;

treatment for couples, families, and groups. Assessment and treatment approaches to particular disorders are compared with reference to etiological assumptions and levels of inference. *Prerequisite:* PSYC 834.

PSYC 836 Advanced Clinical Seminar II: Child
The seminar provides an advanced analysis of issues in the assessment and treatment of behaviour disorders in children in a developmental context. Prototype cases are presented for illustrative discussion of particular clinical issues, e.g. stress-related physical disorders; family therapy; child abuse; age-related symptom expression and variability; non-verbal therapies. *Prerequisite:* PSYC 834.

PSYC 837 Advanced Clinical Seminar II: General
This seminar is a blend of issues examined in PSYC 835 and 836 (see above). *Prerequisite:* PSYC 834.

PSYC 838 Extramural Practicum II: Adult (non-credit)
A senior extramural practicum with adult clients, done under qualified supervision in an applied setting approved by the department's practicum committee, e.g. hospitals, clinics, schools, community and rehabilitation centres. *Prerequisites*: Psych 708 (or 709 or 710), 711 (or 712 or 713), and permission of the Director of Clinical Training.

PSYC 839 Extramural Practicum II: Child (non-credit)
A senior extramural practicum with child clients, done under qualified supervision in an applied setting approved by the department's practicum committee, e.g. hospitals, clinics, schools, community and rehabilitation centres. *Prerequisites*: Psych 708 (or 709 or 710), 711 (or 712 or 713), and permission of the Director of Clinical Training.

PSYC 840 Extramural Practicum II: General (non-credit)
A senior extramural practicum done under qualified supervision in an applied setting approved by the department's practicum committee, e.g. hospitals, clinics, schools, community and rehabilitation centres. *Prerequisites*: Psych 708 (or 709 or 710), 711 (or 712 or 713), and permission of the Director of Clinical Training.

PSYC 844 Clinical and Health Research Area Seminar II
A seminar in which current research of faculty and students working in clinical and health psychology is presented and discussed.

PSYC 845 Cognitive Science Area Seminar II
A seminar in which current research of faculty and students working in cognitive science is presented and discussed.

PSYC 846 Human Development Area Seminar II
A seminar in which current research of faculty and students working on human development and developmental processes is presented and discussed.

PSYC 847 Behavioural Neuroscience Area Seminar II
A seminar in which current research of faculty and students working in behavioural neuroscience is presented and discussed.

PSYC 850 Practicum in Experimental Techniques (3-6 credits)
A practicum designed to give students the opportunity to develop their research skills by such activities as: (a) learning new experimental skills and techniques; (b) developing computer programs for the execution of experiments or the recording or analysis of experimental data; (c) developing new instruments to facilitate research on a problem, and other equivalent activities. Students who elect to take this option submit to their thesis supervisor and to the program director a 3-5 page outline of what they want to do to meet the practicum requirements. Once the practicum is approved, students are responsible for carrying out the activities described in the outline. The number of credits is based on the rule that 45 hours of work equals one credit. *Prerequisite:* Permission of the Ph.D. Program Director.

PSYC 851 Teaching of Laboratory Techniques
A practicum designed to train students in the teaching of laboratory techniques. Under supervision, the graduate student will be responsible for training an apprentice in specialized experimental skills that require extended on-the-job supervision. Suitable topics would include high pressure liquid chromatography, electrophysiological recording, in vivo voltammetry, or computer programming related to a specific experimental application. The number of credits is based on the rule that 45 hours of work equals one credit. *Prerequisite:* Permission of Ph.D. Program Director.

PSYC 880 Ph.D. Comprehensive Examination (non-credit)

PSYC 885 Predoctoral Internship (non-credit)
The pre-doctoral internship consists of the equivalent of 12 months full-time employment under qualified supervision in an applied setting approved by the department's internship committee. The internship is usually done after completion of course requirements, and after data collection and analysis, and a draft of the doctoral thesis have been completed. *Prerequisites:* PSYC 835 (or 836 or 837), 823 (824 or 825), and permission of the Director of Clinical Training.

PSYC 890 Research and Thesis (60 credits)

2060 Mackay, FA-101
Tel.: 848-2424 ext. 2077; Fax: 848-4541

Religion

Faculty

Distinguished Professor Emeritus: Sheila McDonough; ***Professors:*** Frederick Bird, Michel Despland, Jack Lightstone, Michael Oppenheim *(Graduate Program Director, M.A. History and Philosophy of Religion),* Ira Robinson *(Graduate Program Director, M.A. Judaic Studies)*, T.S. Rukmani *(Chair, Hindu Studies)*; ***Associate Professors:*** Lynda Clarke, Norma Joseph *(Chair),* Leslie Orr *(Graduate Program Director, Ph.D.)*, Norman Ravvin *(Chair, Canadian Jewish Studies)*; ***Assistant Professors:*** Marc Desjardins, Philip Harland; ***Extended Term Appointment:*** Donald Boisvert; ***Adjunct Professors:*** John Rossner; ***Adjunct Assistant Professors:*** Barbara Galli, Howard Joseph, Marc Lalonde, Susan Palmer.

Programs

The Department of Religion offers the degrees of Doctor of/Doctorate in Philosophy in Religion, Master of/Magisteriate in Arts in the History and Philosophy of Religion and Master of/Magisteriate in Arts in Judaic Studies. The doctoral degree in Religion is offered as part of a joint program with the Département des sciences religieuses of the Université du Québec à Montréal and the Faculté de théologie et de sciences religieuses of the Université Laval.

Program Objectives

The Department of Religion has, from its inception, stood for impartial, scholarly investigation of the phenomenon of religion in human society. It fosters the comparative understanding of religions and religious experiences as social, cultural and historical realities. It is committed to the idea that the understanding of any one religion and its tradition is enriched by thoughtful inquiries into other religions.

In the Religion Department there are courses in Buddhism, Christianity, Hinduism, Islam, and Judaism, as well as other religions. The courses are taught from a variety of disciplines that are inter-related with the academic study of religion, namely: the sociology of religion, the history of religions, the psychology of religion, the philosophy of religion, ethics, literary and textual criticism, gender and feminist criticism, and cultural studies generally.

It is in this context of shared research and insight that the Department of Religion presents to students its several graduate programs. All students are initiated into the comparative study of religion. Students in the doctoral

program and M.A. in the History and Philosophy of Religion are required to gain an understanding of at least two religious traditions. Students in all programs are expected to gain competency in the scholarly disciplines used in the academic study of religion.

Faculty Research Interests

Faculty within the Department of Religion are involved in research studies related to the various religious traditions of the world, as well as in the fields of the philosophy of religion and the sociology and psychology of religion. Special interests of the department include the comparative study of religious ethics and women and religion.

More specifically faculty members are pursuing research in the following areas: the history of Christianity, especially in the nineteenth and twentieth centuries; the social history of Christianity in the ancient Greco-Roman world and late medieval and early modern periods; the history of the study of religion; Hindu philosophy and Hindu asceticism; the social history of Indian Buddhism, Jainism and Hinduism; religions of Tibet and China, Tibeta-Buddhism, popular religions of China, classical and modern Shiism, Muslim law, and Islamic mysticism; contemporary new religious movements; business ethics and medical ethics; the comparative study of religious ritual; and women in Buddhism, Christianity, Hinduism, Islam, and Judaism.

Within Judaic studies, faculty are pursuing research on the religion of Jews in the ancient Greco-Roman diaspora, the socio-anthropological analysis of rabbinic literature, the popularization of Jewish mysticism in the sixteenth century, the twentieth century Orthodox rabbinate, Jewish law, women in contemporary Judaism, North American Jewish literature, the Canadian Jewish experience, and factors involved in the making of modern Jewish identity.

Doctor of/Doctorate in Philosophy (Religion)

This degree is offered conjointly with the Département des sciences religieuses of the Université du Québec à Montréal and the Faculté de théologie et de sciences religieuses of the Université Laval. There are five areas of concentration: theories of religion, history of religions, contemporary religious phenomena, Judaic studies, and comparative ethics. A student chooses to register in one of the three universities on the basis of the match between faculty expertise and the student's specialization, and is subject to that university's regulations. Each student is graduated by the university of their registration. The joint degree provides a context for collaboration between the three departments, with some exchange of faculty for teaching and direction. There are two required doctoral seminars one of which is common to students at all three universities in alternate years.

Religion

The doctoral program in Religion at Concordia places strong emphasis on a comparative approach. The comparative study of religion incorporates a number of different but related inquiries, including: examination of the inter-relations between religious beliefs and practices; analysis of religions as social and cultural phenomena and of cultures and societies insofar as they have been influenced by religious traditions; study of inter-relations between religions and human values; investigation of religious ethics; as well as analysis of social issues from the perspective of religious values. These studies are comparative insofar as particular expressions of religions and ethics are viewed as unique but historically situated realities which often can best be understood by making formal or informal comparisons with other comparable realities.

Although the requirements are fundamentally the same in all three universities, the remainder of this section applies only to students registered at Concordia.

Admission Requirements. A Master of Arts in Religion, or equivalent, with high standing from a recognized university.

The Department will consider the application of students to the Ph.D. program for entry without completion of the master's degree if the following requirements are met:

- the student has completed 18 credits of graduate level course work in Religion;
- the student is recommended by full-time members of the faculty of the Department of Religion;
- the student has acquired a breadth of knowledge in the study of Religion through course work or scholarly or professional experience;
- the student has demonstrated her or his ability to do independent graduate-level research in religious studies, and has demonstrated the ability to produce an original analysis of her/his research (in the form of research papers, conference papers, or publications);
- the student has a well-formed and focused research plan that will serve as a basis for her/his doctoral research.

Transfer Credits. See Transfer Credits page 24.

Proficiency in English. Any student applying from outside Canada whose first language is other than English must demonstrate proficiency in the English language by writing the Test of English as a Foreign Language administered by the Educational Testing Service. Information and applications to write the test may be obtained by writing to: Test of English as a Foreign Language, Educational Testing Service, Princeton, New Jersey, 08540, U.S.A.

Application Deadlines

December 15	(for students applying for fellowships)
May 1	(for students applying for teaching assistantships)
July 1	(for students applying for the following September)
November 1	(for students applying for the following January)

Requirements for the Degree

1. **Credits.** A fully-qualified candidate is required to complete a minimum of 90 credits.

2. **Residence.** The minimum period of residence is two years (6 terms) of full-time graduate study beyond the master's degree, or the equivalent in part time study, or three years (9 terms) of full-time graduate study beyond the bachelor's degree.

3. **Doctoral Seminars.** All candidates must register for RELI 890 (6 credits) in their first or second or equivalent year of study. This seminar will deal with general and methodological issues in the study of religion. It will be held in common with UQAM and Université Laval; discussion and readings will be both in English and in French. In the first or second or equivalent year of the program, the student will register as well for one of the following seminars according to their specialization: RELI 891, Comparative Religion and Ethics (6 credits), or RELI 892, Judaic Studies (6 credits).

4. **Courses.** A student is required to register for a minimum of 18 credits of directed reading. These courses are offered according to the resources of the department and the needs of the students. They are grouped into RELI 800-818 (Topics in Judaic Studies) and RELI 820-839 (Topics in Comparative Religion and Ethics). Some of the courses at the Master of Arts level are open to Ph.D. candidates, with the requirement of additional work and performance.

5. **Comprehensive Examination.** Graduate students in Religion at the doctoral level are expected to pursue a program of independent study and research in their chosen field. After course work is completed, all candidates must take RELI 860: Doctoral Comprehensive Examination (15 credits). The comprehensive examination will consist of three written exams followed by an oral examination which reviews these exams. Two of these written exams focus on topics from two distinct religious traditions; the third written exam will be on a topic related to a student's proposed thesis. One of the three exams must include a focus on theory and methodology. Credits are not distributed among these four requirements. For purposes of registration, this work will be designated as RELI 860 and is graded as pass/fail.

6. **Thesis.** Each candidate will prepare a doctoral thesis which is to be an original contribution to scholarship. Although the topic should be provisionally chosen and serve as a coordinating factor throughout the student's doctoral program, a written proposal must be formally submitted and approved by the Graduate Studies Committee after the successful completion of the comprehensive examination. For purposes of registration, the thesis will be designated as RELI 870: Doctoral Thesis (45 credits).

7. **Language Requirement.** Each student must demonstrate the ability to read and translate material in the field of religious studies in a modern language other than their maternal tongue; the choice of language is subject to departmental approval. A student is also expected to achieve an acceptable command of the language or languages of the primary sources of their thesis. All Canadian students are required to show a working knowledge of both English and French.

Academic Regulations

1. **GPA Requirement.** The academic progress of students is monitored on a periodic basis. To be permitted to continue in the program, students must obtain a cumulative grade point average (GPA) of 3.00 based on a minimum of 12 credits. Students whose GPA falls below 3.00 are considered to be on academic probation during the following review period. Students whose GPA falls below 3.00 for two consecutive review periods are withdrawn from the program.

2. **C Rule**. A graduate student who receives one grade of "C" will be evaluated by the Departmental Graduate Studies Committee with respect to that student's continuance in the program. Two "C"s will result in automatic withdrawal from the program. See Academic Standing page 63.

3. **F Rule.** Students who receive a failing grade in the course of their Ph.D. studies will be withdrawn from the program. See Academic Standing Rule page 63.

4. **Time Limit.** The limit to complete the doctoral program is six years (18 terms) of full-time study or eight years (24 terms) of part-time study from the time of original registration in the program.

5. **Graduation Requirement.** In order to graduate, students must have a cumulative GPA of at least 3.00.

Courses

Since the topics of elective courses are subject to modification according to student enrolment and demands, no course list is provided in this calendar.

Master of/Magisteriate in Arts (History and Philosophy of Religion)

Admission Requirements. An undergraduate degree in religious studies or Judaic studies, or its equivalent. Qualified applicants requiring prerequisite courses may be required to take up to 12 undergraduate credits in addition to and as a part of the regular graduate program. Applicants with deficiencies in their undergraduate preparation may be required to take a qualifying program. Qualifying program students in the Department of Religion must complete their program with a minimum GPA of 3.00 with no courses graded lower than a "B" to be considered for admission to the graduate program. Qualifying students must reapply to the M.A. program on completion of their Qualifying Program.

Transfer Credits. See Transfer Credits page 24.

Proficiency in English. Any student applying from outside Canada whose first language is other than English must demonstrate proficiency in the English language by writing the Test of English as a Foreign Language administered by the Educational Testing Service. Information and applications to write the test may be obtained by writing to: Test of English as a Foreign Language, Educational Testing Service, Princeton, New Jersey, 08540, U.S.A.

Application Deadlines

December 15	(for students applying for fellowships)
May 1	(for students applying for teaching assistantships)
July 1	(for students applying for the following September)
November 1	(for students applying for the following January)

Requirements for the Degree

1. **Credits.** A fully-qualified candidate is required to complete a minimum of 45 credits.

2. **Residence.** The minimum residence requirement is one year (3 terms) of full-time graduate study, or the equivalent in part-time study.

3. **Course Options.** All students enter in option B (without thesis) and later have the opportunity to apply for option A (with thesis).

Academic Regulations

1. **GPA Requirement.** The academic progress of students is monitored on a periodic basis. To be permitted to continue in the program, students must obtain a cumulative grade point average (GPA) of 3.00 based on a minimum of 12 credits. Students whose GPA falls below 3.00 are considered to be on academic probation during the following review period. Students whose

GPA falls below 3.00 for two consecutive review periods are withdrawn from the program.

2. **C Rule**. A graduate student who receives one grade of "C" will be evaluated by the Departmental Graduate Studies Committee with respect to that student's continuance in the program. Two "C"s will result in automatic withdrawal from the program. See Academic Standing, page 63.

3. **F Rule.** Students who receive a failing grade in the course of their studies will be withdrawn from the program. Please see Academic Standing, page 63.

4. **Time Limits.** The time limit to complete the M.A. in History and Philosophy of Religion for full-time students is 4 years (12 terms) from the time of initial registration in the program or 5 years (15 terms) for part-time students.

5. **Graduation Requirement.** In order to graduate, students must have a cumulative GPA of 3.00.

Master of/Magisteriate in Arts (History and Philosophy of Religion) with Thesis (Option A)

Candidates are required to take the following:

1. **Core Courses**. RELI 609: Theories of Religion (3 credits); and RELI 610: Methodological Problems in the Study of Religion (3 credits).

2. **Elective Courses**. Four other one-term courses (12 credits).

3. **Comprehensive Examination.** RELI 601: (12 credits). The comprehensive examination will consist of two written exams followed by an oral examination which will review the two written exams. The written exams will focus on topics from two distinct religious traditions. Comprehensive exams may be taken as 24 hour take-home exam or as a 4 hour in-house exam and will be evaluated accordingly. At least one of the exams must be written in house. Credits are not distributed among these three requirements and the grade notation of pass/fail will be recorded on completion.

4. **Thesis.** RELI 600: (15 credits). Normally students who wish to transfer to the thesis option should have a 3.5 GPA or higher. Students must submit a thesis proposal on a topic chosen in consultation with the thesis supervisor and approved by the Department's Graduate Studies Committee. Once the thesis proposal is approved the student will be transferred from option B without thesis to option A with thesis. Each thesis shall be read and

graded by the student's thesis supervisor and by two other scholars, one of whom may be an outside examiner.

5. **Language Requirement**. There is no formal language requirement, but if the area of the candidate's research interest indicates the requirement for knowledge of an additional language the Graduate Studies Committee may require proficiency in that language.

   Students wishing to submit a thesis in a language other than English or French must submit a request to their thesis supervisor and graduate studies committee when they submit their thesis proposal for approval.

   Students wishing to continue their graduate studies at the Ph.D. level are seriously encouraged to gain requisite language skills appropriate for the area of studies before entering the Ph.D. program.

Master of/Magisteriate in Arts (History and Philosophy of Religion) without Thesis (Option B)

Candidates are required to take the following:

1. **Core Courses**. RELI 609: Theories of Religion (3 credits); and RELI 610: Methodological Problems in the Study of Religion (3 credits).

2. **Elective Courses**. Eight other one-term courses (24 credits).

3. **Comprehensive Examination.** RELI 601: (12 credits). The comprehensive examination will consist of two written exams followed by an oral examination which will review the two written exams. The written exams will focus on topics from two distinct religious traditions. Comprehensive exams may be taken as 24 hour take-home exam or as a 4 hour in-house exam and will be evaluated accordingly. At least one of the exams must be written in house. Credits are not distributed among these three requirements and the grade notation of pass/fail will be recorded on completion.

4. **Guided Research Paper.** RELI 603 (3 credits). The guided research paper involves the preparation of a substantial research paper.

5. **Language Requirement.** There is no formal language requirement, but if the area of the candidate's research interest indicates the requirement for knowledge of an additional language, the Graduate Studies Committee may require proficiency in that language.

   Students wishing to submit a research paper in a language other than English or French must submit a request to their research paper supervisor

and graduate studies committee when the research paper topic is submitted for approval.

Students wishing to continue their graduate studies at the Ph.D. level are seriously encouraged to gain requisite language skills appropriate for the area of studies before entering the Ph.D. program.

Courses

Candidates for the Master of Arts in the History and Philosophy of Religion may select courses from the course category listings below, as well as those offered by the Master of Arts program in Judaic Studies, which are listed in the next section. Courses are selected after consultation with the Graduate Program Director.

No graduate student may take more than two 3-credit courses or one 6-credit course outside the Department. Permission to substitute outside courses must be granted before taking the course by both the Graduate Program Director in the History and Philosophy of Religion program and by the other Department involved.

All of the general course categories listed below are for one-term, 3-credit courses unless otherwise indicated. A list designating which specific courses are to be offered in any given year, with description of content is available from the Graduate Program Assistant, and on the Department website:
http://artsandscience.concordia.ca/religion/reli.html

Topics in World Religions

Courses offered in recent years include: Islam in North America; Survey of Islamic literature; The Systems of Yoga; Advaita Philosophy of Sankara; Social History of Indian Religions; Women and Buddhism; Gandhi and the Muslims; Buddhist Cosmologies; Power and the Body in Hindu and Buddhist Tantra.

RELI 611 Concepts in the Historical Study of Judaism
RELI 612 History of Islamic Thought and Institutions
RELI 613 Modern Islamic Thought and Institutions
RELI 614 History of Hindu Thought and Institutions
RELI 615 Modern Hindu Thought and Institutions
RELI 616 History of Buddhist Thought and Institutions
RELI 617 Modern Buddhist Thought and Institutions
RELI 618 Studies in World Religions and Problems in Modernization in the Middle East and Asia
RELI 619 Reading Course in World Religions

Topics in Religious and Philosophical Thought

Courses offered in recent years include: Religious Wars, Violence, and Sacrifice; Jewish and Christian Responses to the Holocaust; Faith and Reason in Medieval Judaism, Islam, and Christianity; Abrahamic Faiths; and Theories of Sacrifice.

RELI 621 Selected Readings in Modern Religious Thought
RELI 623 Selected Readings in Contemporary Religious Thought
RELI 626 Religious Language
RELI 627 Mysticism
RELI 628 Faith and Reason in Religion
RELI 629 Reading Course in Religious and Philosophical Thought

Topics in Religion and Society

Courses offered in recent years include: Love, Sex and Marriage in Judaism; Heresy and the Formation of Christian Tradition and Justice; Ethics and Religion in a Secular Culture; Gnosticism; and Christian Reformation.

RELI 630 Theoretical Problems in Religion and Culture
RELI 632 Comparative Ethics I
RELI 633 Comparative Ethics II
RELI 636 Religion and Images of Man in Contemporary Cultures
RELI 637 Christianity and Society–Ancient and Medieval Periods
RELI 638 Christianity and Society–Reformation and Modern Periods
RELI 639 Reading Course in Religion and Society

Topics in Christian Studies

Courses offered in recent years include: History of Popular and Official Christianity; Body and Soul - Questions of Dualism; History of Women and Christianity; and From Toleration to Political and Social Activism.

RELI 640 Biblical Studies
RELI 641 History of Christian Thought
RELI 642 Issues in Systematic Theology
RELI 643 Contemporary Catholic Thought
RELI 644 Protestantism
RELI 645 Ecclesiology
RELI 646 Christian Ethics
RELI 647 Orthodox Christianity
RELI 649 Reading Course in Christianity

Topics in Judaic Studies

See listings for Master of/Magisteriate in Arts (Judaic Studies) below.

Thesis, Research Paper, Comprehensive Examination, Methodology

RELI 600 **Master's Thesis in History and Philosophy of Religion** (15 credits)
RELI 601 **Comprehensive Examination** (12 credits)
RELI 603 **Research Paper**
RELI 609 **Theories of Religion**
RELI 610 **Methodological Problems in the Study of Religion**

Master of/Magisteriate in Arts (Judaic Studies)

Admission Requirements. An undergraduate degree in Judaic Studies or its equivalent, including courses corresponding to RELI 301 (The Hebrew Bible), RELI 326 (Ancient Judaism), RELI 327 (Medieval Jewish Thought and Institutions), RELI 328 (Modern Jewish Thought and Institutions). Qualified applicants requiring prerequisite courses may be required to take up to 12 undergraduate credits in addition to and as a part of the regular graduate program. Applicants with deficiencies in their undergraduate preparation may be required to take a qualifying program. Qualifying program students in the Department of Religion must complete their program with a minimum GPA of 3.00 with no courses graded lower than a "B" to be considered for admission to the graduate program.
Candidates must demonstrate proficiency in the reading of Hebrew by taking an examination.

Transfer Credits. See Transfer Credits page 24.

Proficiency in English. Any student applying from outside Canada whose first language is other than English must demonstrate proficiency in the English language by writing the Test of English as a Foreign Language administered by the Educational Testing Service. Information and applications to write the test may be obtained by writing to: Test of English as a Foreign Language, Educational Testing Service, Princeton, New Jersey, 08540, U.S.A.

Application Deadlines

December 15 (for students applying for fellowships)
May 1 (for students applying for teaching assistantships)
July 1 (for students applying for the following September)
November 1 (for students applying for the following January)

Requirements for the Degree

1. **Credits.** A fully-qualified candidate is required to complete a minimum of 45 credits.

2. **Residence.** The minimum residence requirement is 3 terms of full-time study, or the equivalent in part-time study.

3. **Course Options.** All students enter in course option B without thesis, they later have the opportunity to apply for option A with thesis.

Academic Regulations

1. **GPA Requirement.** The academic progress of students is monitored on a periodic basis. To be permitted to continue in the program, students must obtain a cumulative grade point average (GPA) of 3.00 based on a minimum of 12 credits. Students whose GPA falls below 3.00 are considered to be on academic probation during the following review period. Students whose GPA falls below 3.00 for two consecutive review periods are withdrawn from the program.

2. **C Rule**. A graduate student who receives one grade of "C" will be evaluated by the Departmental Graduate Studies Committee with respect to that student's continuance in the program. Two "C"s will result in automatic withdrawal from the program. See Academic Standing, page 63.

3. **F Rule.** Students who receive a failing grade in the course of their studies will be withdrawn from the program. Please see Academic Standing, page 63.

4. **Time Limits.** The time limit to complete the M.A. in Judaic Studies for full-time students is 4 years (12 terms) from the time of initial registration in the program or 5 years (15 terms) for part-time students.

5. **Graduation Requirement.** In order to graduate, students must have a cumulative GPA of at least 3.00.

Master of/Magisteriate in Arts (Judaic Studies) with Thesis (Option A)

1. **Core Courses.** RELI 610 (3 credits), and RELI 609 (3 credits) or RELI 611 (3 credits)

2. **Elective Courses.** Four other one-term courses, which may include one course in another religious tradition (12 credits).

3. **Comprehensive Examination.** RELI 601 (12 credits). The comprehensive examination will consist of two written exams followed by an oral examination which will review the two written exams. Comprehensive exams may be taken as 24 hour take-home exam or as a 4 hour in-house exam and will be evaluated accordingly. At least one of the exams must be written in house. The written exams will focus on topics from Judaism in Late Antiquity, Medieval Judaism and Modern Judaism. Credits are not distributed among these three requirements and the grade notation of pass/fail will be recorded on completion.

4. **Thesis.** RELI 602 (15 credits). Normally students who wish to transfer to the thesis option should have a 3.5 GPA or higher. Students must submit a thesis proposal on a topic chosen in consultation with the thesis supervisor and approved by the Department's Graduate Studies Committee. Once the thesis proposal is approved the student will be transferred from option B without thesis to option A with thesis. Each thesis shall be read and graded by the student's thesis supervisor and by two other scholars, one of whom may be an outside examiner.

5. **Language Requirement.** Aside from Hebrew, there is no formal language requirement, but if the area of the candidate's research interest indicates the requirement for knowledge of an additional language the Graduate Studies Committee may require proficiency in that language.

   Students wishing to submit a thesis in a language other than English or French must submit a request to their thesis supervisor and graduate studies committee when they submit their thesis proposal for approval.

   Students wishing to continue their graduate studies at the Ph.D. level are seriously encouraged to gain requisite language skills appropriate for the area of studies before entering the Ph.D. program.

Master of/Magisteriate in Arts (Judaic Studies) without Thesis (Option B)

1. **Core Courses:** RELI 610 (3 credits), and RELI 609 (3 credits) or RELI 611 (3 credits).

2. **Elective Course:** Eight other one-term courses, including at least one course in another religious tradition (24 credits).

3. **Comprehensive Examination:** RELI 601 (12 credits). This course consists of two written examinations and an oral review. Comprehensive exams may be taken as 24 hour take-home exam or as a 4 hour in-house exam and will be evaluated accordingly. At least one of the exams must be written in house. Candidates will elect to be examined on two of the following areas: Judaism in Late Antiquity, Medieval Judaism, Modern Judaism.

4. **Guided Research Paper:** RELI 603 (3 credits). The guided research paper is a substantial research paper.

5. **Language Requirement.** Aside from Hebrew, there is no formal language requirement, but if the area of the candidate's research interest indicates the requirement for knowledge of an additional language the Graduate Studies Committee may require proficiency in that language.

   Students wishing to submit a research paper in a language other than English or French must submit a request to their research paper supervisor and graduate studies committee when the research paper topic is submitted for approval.

   Students wishing to continue their graduate studies at the Ph.D. level are seriously encouraged to gain requisite language skills appropriate for the area of studies before entering the Ph.D. program.

Courses

Candidates for the Master of Arts in Judaic Studies may select courses from the general course categories listed below, as well as those offered by the Master of Arts program in History and Philosophy of Religion, which are listed in the previous section. Courses are selected after consultation with the Graduate Program Director.

No graduate student may take more than two 3-credit courses or one 6-credit course from those offered outside the Department. Permission to substitute outside courses must be granted by both the Graduate Program Director in the Judaic Studies program and by the other Department involved.

All of the general course categories listed below are for one-term, 3-credit courses unless otherwise indicated. A list designating which specific courses are to be offered in any given year, with description of content is available from the Graduate Program Assistant, and on the Department website:
http://artsandscience.concordia.ca/religion/reli.html

RELI 611 Concepts in the Historical Study of Judaism

Other graduate courses offered by the Judaic Studies program fall into the following categories:

RELI 650-659 Topics in Hebrew Bible and Ancient Near Eastern Studies
RELI 660-669 Topics in Rabbinic Judaism
RELI 670-679 Judaism in Late Antiquity
RELI 680-689 Topics in Medieval Judaism
RELI 690-699 Topics in Modern Judaism

Topics in Hebrew Bible and Ancient Near Eastern Studies

Courses offered in recent years include: Women in the Hebrew Bible and The Book of Judges.

RELI 650 Hebrew Bible I
RELI 651 Hebrew Bible II
RELI 655 Ancient Near Eastern Studies I
RELI 656 Ancient Near Eastern Studies II
RELI 659 Reading Course in Ancient Near Eastern Studies

Topics in Rabbinic Judaism

Courses offered in recent years include: Judaic Law—Gender Issues and Early Rabbinic Texts.

RELI 664 Tannaitic Literature
RELI 665 Midrash
RELI 666 Talmud
RELI 669 Reading Course in Rabbinic Judaism

Topics in Judaism in Late Antiquity

Courses offered in recent years include: Midrash and Talmudic Mysticism.

RELI 670 Judaism in Late Antiquity
RELI 677 Hellenistic Literature
RELI 679 Reading Course in Judaism in Late Antiquity

Topics in Medieval Judaism

Courses offered in recent years include: Jewish Law and Ethics and Jews and Christians in the Middle Ages.

RELI 680 Medieval Jewish History I
RELI 685 Medieval Jewish History II
RELI 686 Medieval Jewish Thought I
RELI 687 Medieval Jewish Thought II
RELI 688 Jewish Mysticism
RELI 689 Reading Course in Medieval Judaism

Topics in Modern Judaism

Courses offered in recent years include: Judaism and Pluralism; Religion and State in Israel; Impact of the Holocaust on Religious Thought; and Gender Issues in Modern Jewish History.

RELI 694 Modern Jewish Thought I
RELI 695 Modern Jewish Thought II
RELI 696 Modern Jewish Thought III
RELI 697 Modern Jewish History I
RELI 698 Modern Jewish History II
RELI 699 Reading Course in Modern Judaism

Topics in the History and Philosophy of Religion
(Especially relevant to the program in Judaic Studies)

RELI 628 Faith and Reason in Religion
RELI 641 History of Christian Thought

Thesis, Comprehensive Examination, Research Paper

RELI 601 Comprehensive Examination (12 credits)
RELI 602 Master's Thesis (Judaic Studies) (15 credits)
RELI 603 Research Paper
RELI 609 Theories of Religion
RELI 610 Methodological Problems in the Study of Religion

School of Community and Public Affairs

2149 Mackay, CI 101
Tel.: 848-2424 ext. 2575; Fax: 848-2577
e-mail: scpa@alcor.concordia.ca
website: http://scpa-eapc.concordia.ca/graduate

Community Economic Development (CED)

Faculty

Professor: Daniel Salée; ***Associate Professors:*** Marguerite Mendell, Eric Shragge *(Graduate Program Director)*.

Program

The School of Community and Public Affairs offers a Graduate Diploma in Community Economic Development (CED).

Program Objectives

The general objective of the Graduate Diploma Program in CED is to build knowledge and capacity in the new field of community economic development by providing education, technical assistance and resources, and applied research in this field. The program seeks to affirm and strengthen participants' leadership abilities as critically reflective practitioners. More specifically, the program provides education and guidance to present and future practitioners of CED that will increase their ability to:

- assess a community's need for CED intervention;
- strategically plan a relevant course of action, including choosing between different CED approaches and models to best respond to the context;
- mobilize specific population groups, especially the marginalized poor, build coalitions and organize the members of a community in ways that will favour its socioeconomic revitalization and empowerment;
- design, implement, organize, and manage specific CED initiatives and programs;
- address differences and resolve conflicts that may arise during such activity;
- monitor organizational performance and evaluate the evolution and outcomes of the CED process;
- influence the direction and contribute to the development of appropriate public policies and programs.

Admission Requirements. To be admitted into the program, applicants will generally be expected to have completed an undergraduate degree with a GPA of 3.00 and must be able to read, write, and express themselves in either English or French.

Each applicant's background, practical experience and learning goals will be fully considered. Applicants are required to submit a two-to-four page personal

statement in which they outline their particular field(s) of interest, their strengths and weaknesses, what they expect or hope from their studies, how these expectations tie into their personal or professional goals, and what they expect to contribute to a better understanding of CED.

The Graduate Diploma Program in CED will comply with all other admission criteria established by the School of Graduate Studies.

Residence Requirements. Courses are offered during an extended weekend once a month over the three consecutive terms of the program. A half-time option is also available.

Application Deadline. The deadline for completed applications is February 1 (for the Fall term), however applications may be considered after that date if there are places remaining. Application forms specific to the program and detailed descriptions of the program *(également disponibles en français)* may be obtained by calling (514) 848-2424 ext. 2575 at the School of Community and Public Affairs, visiting the School, e-mailing: scpa@alcor.concordia.ca, or visiting the program website http://scpa-eapc.concordia.ca/graduate

Requirements for the Diploma

To obtain the Graduate Diploma in CED, students will have to obtain a minimum of 30 course credits and a minimum GPA of 2.70. Courses offered by the program are divided between required core courses, open sessions, a project, as well as elective courses. A typical progression through the program takes one year (three semesters):

- Fall Semester: three required courses (9 credits) and one open session (1 credit);
- Winter Semester: two required courses (6 credits), first four months of the student's project course (3 credits), and one open session (1 credit);
- SummerSemester: two elective courses from the areas of concentration (6 credits)*, the last four months of the student's project course (3 credits), and one open session (1 credit).

* Students may take either two courses (Part I and Part II) in a single area of concentration, or one course (Part I) in two areas of concentration, subject to available resources. (All Part II courses require successful completion of Part I in the same area of concentration).

To remain in good academic standing, students have to maintain a minimum GPA of 2.70.

Language of Courses

Students are required to have an excellent knowledge of written and spoken English or French. This program alternates annually between English (years 2006, 2008...) and French (years 2007, 2009...). Students must be able to express themselves in the language in which courses are offered. They can submit written work in either language.

Courses

Required Core Courses

SCPA 501 Introduction to Community Economic Development (3 credits)
This course provides an overview of CED. It traces the historical and intellectual roots of CED as well as critically situates CED in the context of theories of community, local and regional development. Students are provided with basic tools of macro-economic analysis and policy evaluation as it relates to the practice of CED. This course focuses on the institutional environment in which CED initiatives operate to identify the potential and the limitations of local, community-based development strategies. Special focus is given to the perspectives of CED arising out of the feminist movement, cultural communities, Aboriginal communities, the popular sector and other social change movements.

SCPA 502 Comparative Approaches and Models in CED (3 credits)
This course focuses on the objectives of CED by examining the various strategies and diversity of models of CED practices in Quebec, as well as many found elsewhere in Canada, the United States, in Europe and in southern hemispheric countries. The differences in organizational structures and empowerment processes, as well as their social, cultural and economic context is studied and evaluated, mainly through case studies of selected communities.

SCPA 503 Fundamental Skills for CED Practice (3 credits)
This course focuses on helping students acquire a working knowledge of the practical skills required for building community economic capacity. This includes developing tools to map the material, environmental and human resources within communities. This course assists students in designing socio-economic indicators and a framework for evaluation of CED initiatives and strategic planning. Students are encouraged to identify, as soon as possible, how the use of such skills can be incorporated into either a CED project or an internship within a CED initiative.

SCPA 504 Community Organizing and CED (3 credits)
This course focuses on helping students acquire a working knowledge of the practical skills required in community organizing and capacity building for individual and community empowerment within a CED context. The course explores the role of popular education in community mobilization and collective

action, and delves into the strategies, tactics and techniques of community intervention.

SCPA 505 Social Enterprise Development and Social Entrepreneurship (3 credits)
This course provides a framework for business development within a CED perspective. Basic tools for enterprise development, including comprehensive business planning, data evaluation, financial analysis, and forecasting are to be integrated into a social and ethical framework to maintain the democratic objectives of CED. Students develop skills in evaluating a successful commercial venture within the context of these larger objectives.

Project

SCPA 510 CED Field Project – Part I (3 credits)
SCPA 510 structures the Field Project. It introduces students to tools that can be used to design and implement their projects. During this course, students begin to implement their plan with the host organization. Assignments are based on the integration of the tools with the work undertaken in the field project.
Note: This course is part of the requirement that students complete a two-semester field project in some aspect of community economic development. This project is selected and negotiated by the student with a community organization and addresses a particular challenge raised within this setting.

SCPA 511 CED Field Project – Part II (3 credits)
Prerequisite: SCPA 510
Students continue their field project for a second term within the framework of this course. They build on the practice of the previous term and advance it to reach the objectives established with their host organization. This course aims to strengthen the student's skills in the critical evaluation of practice. Students examine their practice and the reasons for its success, as well as examine strategies for overcoming the barriers they faced. This course offers a framework for the final written report required of students, to be both shared with their host organizations and submitted for the course.

Areas of Concentration: Elective Courses

Areas of concentration are identified according to CED practices in order to help students choose elective courses relevant to their fields of professional specialization or of personal interest. Students will have indicated their priority areas of concentration on their application for admission form.

Up to five areas of concentration are offered, resources permitting, in a given year. The areas are: financing CED initiatives; housing, land use, and urban planning from a CED perspective; communications, technology and CED; international development and CED; Aboriginal CED.

Courses corresponding to these areas of concentration are the following:

SCPA 508 Financing CED Initiatives: Part I (3 credits)
This course examines the roles which can be played by both traditional (banks) and non-traditional (community loan funds) financial institutions in supporting CED initiatives. Special emphasis is placed on exploring alternative financial CED structures. Skills are developed to understand and generate financial planning, as well as investment decisions in traditional and non-traditional enterprises.

SCPA 509 Financing CED Initiatives: Part II (3 credits)
Prerequisite: SCPA 508
This course uses a case study approach to critically examine and evaluate existing alternative CED initiatives in Canada and the US. This may include on site visits, interviews and occasional guest lecturers.

SCPA 515 Housing and Land Use from a CED Perspective: Part I (3 credits)
This course examines the institutional, economic, political, and environmental factors which affect land policy, and the development of affordable housing. It identifies public and private financial sources and various forms of ownership models including community land trusts and housing cooperatives, among others. Among the skills developed are those related to market analysis and housing needs assessment, site selection and control, and preparing housing projects.

SCPA 516 Housing and Land Use from a CED Perspective: Part II (3 credits)
Prerequisite: SCPA 515
This course uses a case study approach to critically examine and evaluate existing housing projects, affordable housing and land policy based on a selection of experiences in the U.S. and in Canada. This may include on site visits, interviews and occasional guest lecturers.

SCPA 522 Communications, Technology and CED: Part I (3 credits)
This course explores issues related to information management, analysis and dissemination using different vehicles available including mass media, the Internet, and other new technologies as they emerge. Basic computer literacy is required.

SCPA 523 Communications, Technology and CED: Part II (3 credits)
Prerequisite: SCPA 522
This course equips practitioners with skills required to share and diffuse CED practices across communities that work in isolation and helps to develop the skills required for communities to use the new technologies and resources necessary for development purposes.

SCPA 529: International Development and CED: Part I (3 credits)
This course explores community-based economic development approaches in countries of the South within their socio-political and historical context. Many

economic initiatives in the North have borrowed from these experiences. The course explores the advantages and disadvantages of importing and exporting development models and practices and equips the students with the skills to evaluate the appropriateness of CED models and how to adapt the models, wherever required.

SCPA 530: International Development and CED: Part II (3 credits)
Prerequisite: SCPA 529
This course explores existing North/South networking and collaboration by identifying non-governmental organizations, community groups and social movements which are working together to develop CED strategies in their respective countries. Discussion is encouraged through class seminars and occasional guest lectures.

SCPA 536 Aboriginal CED: Part I (3 credits)
This course assists participants in exploring specific issues related to Aboriginal community economic development in particular settings (on reserve, urban, rural and northern communities), and addresses challenges common to Aboriginal CED. The course assists participants in exploring historical and contemporary relationships between Aboriginal communities and the predominant cultural and economic forces, and compares traditional Aboriginal organizing and economic practices with the new approaches being proposed by CED.

SCPA 537 Aboriginal CED: Part II (3 credits)
Prerequisite: SCPA 536
This course uses a case study approach to evaluate one or more community economic development strategies applied within an Aboriginal community. A historical overview of this experience outlines the cultural and political context which has shaped these strategies as well as their results. CED approaches are examined in the context of this individual experience. This course may include on site visits and guest lecturers.

Open Sessions

SCPA 543 A-Z Open Sessions (1 credit each)
The themes and content of the various open sessions are determined at the beginning of each academic year. Three open sessions are offered every year (1 credit each for a total of 3 credits). Possible topics may include: feminist approaches to CED, lobbying decision-making bodies, consensus management, coalition-building, and using the internet for community development purposes - as well as topics related to current events.

École des affaires publiques et communautaires

2149, rue Mackay, CI 101
Tél. 848-2424 ext. 2575; Fax: 848-2577
courriel: scpa@alcor.concordia.ca
site internet: http://scpa-eapc.concordia.ca

Développement économique communautaire

Corps enseignant

***Professeur*:** Daniel Salée; ***Professeur-e-s agrégé-e-s*:** Marguerite Mendell, Eric Shragge *(directeur du Programme)*.

Programme

L'École des affaires publiques et communautaires offre un diplôme de 2e cycle en développement économique communautaire (DÉC).

Objectifs du programme

Le diplôme de 2e cycle en DÉC a pour objectif général de faciliter l'acquisition de connaissances et de compétences dans le nouveau domaine du développement économique communautaire. Le programme cherche à doter les participant-e-s des outils théoriques et pratiques qui leur permettront d'assurer un rôle significatif en tant qu'intervenant-e-s informé-e-s et critiques au sein de leur milieu, ce au moyen d'une formation et de ressources techniques appropriées et de la mise en chantier de recherches appliquées dans le domaine du DÉC.

Plus spécifiquement, le programme forme et guide les praticien-ne-s déjà engagé-e-s ou désirant s'engager dans des initiatives de DÉC de manière à accroître leur aptitude à :

- évaluer les besoins en DÉC d'une communauté donnée;
- élaborer stratégiquement un plan d'action cohérent en choisissant les divers modèles et approches de DÉC les plus appropriés à la situation;
- mobiliser des groupes de population spécifiques, surtout les personnes démunies et marginalisées, et former des coalitions, afin d'aider les membres d'une communauté à s'organiser de façon à favoriser sa revitalisation socio-économique et son *empowerment*;
- concevoir, mettre en œuvre, organiser et gérer des programmes et initiatives spécifiques de DÉC;
- affronter les différends et résoudre les conflits susceptibles d'émerger lors de telles activités;
- jauger la performance organisationnelle et évaluer l'évolution et les résultats du processus de DÉC;
- influencer la direction de politique publics et programmes appropriés et contribuer à leur développement.

Conditions d'admission. De façon générale, pour être admis au programme, il faut avoir obtenu au préalable un diplôme universitaire de 1er cycle avec une moyenne générale d'au moins 3.0. Il faut aussi pouvoir lire, écrire et s'exprimer correctement en anglais ou en français.

Les antécédents et les objectifs d'apprentissage de chacun-e des candidat-e-s seront étudiés à fond. Les candidat-e-s doivent soumettre une déclaration personnelle de deux à quatre pages dans laquelle ils/elles décrivent leurs champs d'intérêt spécifiques, leurs forces et leurs faiblesses ce qu'ils/elles espèrent obtenir de leurs études, comment ces attentes sont liées à leurs buts personnels ou professionnels, et en quoi ils/elles comptent contribuer à une meilleure compréhension du DÉC.

Le Diplôme de 2e cycle en DÉC respectera tous les autres critères établis par l'École des études supérieures.

Présence requise. Les cours sont offerts une fois par mois pendant un long week-end durant les trois trimestres consécutifs du programme. L'option à demi-temps est également disponible.

Date limite des demandes d'admission. La date limite pour la réception des demandes complètes est le 1 fevrier (pour le trimestre d'automne), mais les demandes reçues après cette date pourraient être évaluées s'il reste des places. Les demandes d'admission propres au programme ainsi que sa description détaillée *(also available in English)* peuvent être obtenues en appelant au (514) 848-2424 ext. 2575 à l'École des affaires publiques et communautaires, en visitant l'École, par courriel: scpa@alcor.concordia.ca, ou en consultant le site internet: http://scpa-eapc.concordia.ca

Exigences du programme

Pour obtenir le Diplôme de 2e cycle en DÉC, les étudiant-e-s doivent cumuler un minimum de 30 crédits avec une moyenne générale de 2.70. Les cours du programme sont répartis entre cours obligatoires, cours optionnels, sessions ouvertes, et un projet d'intervention. Un parcours typique se fait en un an (trois trimestres):

- Trimestre d'automne : trois cours obligatoires (9 crédits) et une session ouverte (1 crédit);
- Trimestre d'hiver : deux cours obligatoires (6 crédits), les quatre premiers mois du projet (3 crédits) et une session ouverte (1 crédit);
- Trimestre d'été : deux cours correspondant au champ de spécialisation optionnel (6 crédits)*, les quatre derniers mois du projet (3 crédits) et une session ouverte (1 crédit).

* Les étudiant-e-s peuvent prendre deux cours dans un champ de spécialisation (Partie I et Partie II) ou un cours (Partie I) dans deux champs de spécialisation, selon les ressources disponibles. (Pour s'inscire

dans les cours de la Partie II, il faut avoir complété avec succès la Partie I du même champ de spécialisation).

Les étudiant-e-s doivent maintenir une moyenne générale minimum de 2.70 pendant la durée du programme.

Langues d'enseignement

Les étudiant-e-s doivent maîtriser le français ou l'anglais à l'oral comme à l'écrit. Le programme est offert alternativement en anglais et en français. Les cours se donnent en anglais durant l'année inaugurale du programme (automne de l'an 2006), puis en français l'année suivante, et ainsi de suite. Les cours du programme seront donc offerts en français à l'automne de l'an 2007, 2009, 2011… Les participant-e-s doivent s'exprimer couramment dans la langue d'enseignement utilisée durant l'année où leur programme se donne. Ils/Elles peuvent soumettre leurs travaux écrits en français ou en anglais.

Cours

Cours obligatoires du tronc commun

SCPA 501 : Introduction au développement économique communautaire (3 crédits)
Ce cours offre une vue d'ensemble du DÉC. Il retrace l'historique et les fondements intellectuels du DÉC et situe le DÉC par rapport aux théories du développement communautaire local et régional. Le cours fournit également aux étudiant-e-s des outils de base pour l'analyse macro-économique et pour l'évaluation des politiques sociales relatives à la pratique du DÉC. Ce cours se concentre sur l'environnement institutionnel dans lequel les initiatives de DÉC opèrent afin d'identifier le potentiel et les limites des stratégies de développement axées sur les communautés locales. Une attention particulière est portée aux perspectives de DÉC émanant du mouvement féministe, des communautés culturelles, des communautés autochtones, du mouvement populaire et d'autres mouvements de changement social.

SCPA 502 : Approches comparatives et modèles de DÉC (3 crédits)
Ce cours se concentre sur les objectifs du DÉC en examinant les diverses stratégies et les différents modèles de pratique de DÉC au Québec, ainsi qu'ailleurs au Canada, aux États-Unis, en Europe et dans les pays de l'hémisphère sud. Des études de cas de communautés sélectionnées sont principalement utilisées afin d'étudier et d'évaluer les différences existant au sein des structures organisationnelles et des processus d'*empowerment*, ainsi que leur contexte social, culturel et économique.

SCPA 503 : Compétences de base en DÉC (3 crédits)
Ce cours aide les étudiants et étudiantes à acquérir une connaissance d'usage des compétences pratiques requises pour bâtir la capacité de prise en charge

économique d'une communauté. Ceci comprend l'élaboration d'outils permettant d'inventorier les ressources matérielles, environnementales et humaines au sein d'une communauté. Ce cours aide aussi les étudiants et étudiantes à élaborer des indices socio-économiques ainsi qu'un cadre d'évaluation des initiatives de DÉC et de la planification stratégique. Les étudiant-e-s sont encouragé-e-s, le plus tôt possible, à identifier comment ils/elles pourront inclure ces compétences dans un projet de DÉC ou un stage à l'intérieur d'une initiative de DÉC.

SCPA 504 : Organisation communautaire et DÉC (3 crédits)
Ce cours permet aux étudiant-e-s d'acquérir une connaissance d'usage des compétences pratiques nécessaires pour maîtriser l'organisation communautaire et pour développer l'*empowerment* des individus et des communautés dans un contexte de DÉC. Ce cours explore le rôle que joue l'éducation populaire dans la mobilisation des communautés et dans l'action collective, et approfondit les tactiques, stratégies et techniques de l'intervention communautaire.

SCPA 505 : Développement d'entreprises sociales et entreprenariat social (3 crédits)
Ce cours propose un cadre de référence pour le développement d'entreprises selon une perspective de DÉC. Des outils de base pour le développement d'entreprises, incluant le développement de plans d'affaires complets, l'évaluation de données, l'analyse financière et l'élaboration de prévisions, seront intégrés dans un cadre social et éthique afin de préserver les objectifs démocratiques du DÉC. Les étudiant-e-s développent les compétences requises afin d'évaluer le succès d'une entreprise commerciale en tenant compte du contexte global de ces objectifs.

Projet

SCPA 510 : Projet en DÉC. Partie I (3 crédits)
En suivant le programme à temps plein, les participant-e-s devront, une fois les trois premiers cours principaux du trimestre d'automne complétés, entreprendre un cours de projet de deux trimestres dans un domaine du développement économique communautaire relié à leur spécialisation ou à champ d'intérêts. Ce projet peut se dérouler au sein du milieu de travail ou de bénévolat du/de la participant-e.

Le projet pratique constitue une occasion pour les participant-e-s de faire face – de manière participative – à un défi particulier qui les passionne et qui est perçu comme important par l'organisme au sein duquel le projet se déroule. Les participant-e-s devront faire appel à leurs forces, leurs expériences passées, et leurs talents, tout en tenant compte de leurs objectifs d'apprentissage. Tous les participantes et participants devront assumer la responsabilité de définir, chercher et négocier leurs projets pratiques par eux-mêmes, avec, bien sur, l'appui du programme de diplôme de 2e cycle en DÉC.

SCPA 511 : Projet DÉC. Partie II (3 crédits)
[Préalable SCPA 510]
Dans la deuxième partie du cours, les participant-e-s analyseront de façon critique leur progrès au sein de leurs projets respectifs, et rédigeront un rapport final résumant et évaluant le projet et les expériences que celui-ci les a amené-e-s à vivre. Ce projet permettra de vérifier les compétences acquises et de valider les idées et théories apprises dans une situation réelle. Des practicien-ne-s de DÉC sont invité-e-s à participer à l'évaluation des résultats du projet.

Domaines de spécialisation : cours optionnels

Les domaines de spécialisation sont identifiés selon les pratiques de DÉC de façon à aider les étudiant-e-s à choisir des cours optionnels adaptés à leurs spécialités professionnelles ou leurs intérêts personnels; le choix de domaine de spécialisation est spécifié dans la demande d'admission.

Jusqu'à cinq domaines de spécialisation sont offerts chaque année. Les domaines identifiés sont: le financement des initiatives de DÉC; le logement, l'aménagement du territoire et l'urbanisme dans une perspective de DÉC; les communications, la technologie et le DÉC; le développement international et le DÉC; le DÉC en milieu autochtone.

Les cours qui correspondent à ces domaines de spécialisation sont les suivants:

SCPA 508 : Le financement des initiatives de DÉC. Partie I (3 crédits)
Ce cours permet d'étudier les rôles que peuvent jouer les institutions financières traditionnelles (les banques) et non traditionnelles (les associations communautaires de prêt) pour soutenir les initiatives de DÉC. Une attention particulière est portée à l'étude des structures financières alternatives de DÉC. Les compétences requises afin de comprendre et d'initier la planification financière ainsi que la prise de décision quant aux investissements dans les entreprises traditionnelles et non traditionnelles sont également développées.

SCPA 509 : Le financement des initiatives de DÉC. Partie II (3 crédits)
[Préalable - SCPA 508]
La seconde partie de ce cours empruntera une approche d'étude de cas pour examiner de façon critique et évaluer des initiatives originales de DÉC au Canada et aux États-Unis. Cela pourrait comprendre la visite de sites, des entrevues et des conférences occasionnelles.

SCPA 515 : Logement et aménagement du territoire dans une perspective de DÉC. Partie I (3 crédits)
Ce cours examine les facteurs institutionnels, économiques, politiques et environnementaux qui influent sur la politique d'aménagement du territoire et la création de logements à prix modique. Il décrit aussi les sources financières publiques et privées ainsi que diverses formes de propriété, y compris les

fiducies foncières communautaires et les coopératives de logement. Il permet d'acquérir, entre autres, des compétences en analyse du marché, évaluation des besoins en logement, sélection et contrôle des sites, et préparation de projets domiciliaires.

SCPA 516 : **Logement et aménagement du territoire dans une perspective de DÉC. Partie II** (3 crédits)
[Préalable - SCPA 515]
Ce cours se fonde sur des études de cas américaines et canadiennes afin d'effectuer un examen critique et une évaluation de projets domiciliaires existants, du logement à prix modique et de la politique d'aménagement du territoire. Il pourrait comprendre des visite de sites, des entrevues et des conférences occasionnelles.

SCPA 522 : **Communications, technologie et DÉC. Partie I** (3 crédits)
Ce cours explore les questions liées à la gestion, à l'analyse et à la diffusion de l'information par différents moyens, y compris les médias de masse, Internet, et les technologies en émergence. Les participant-e-s doivent posséder des connaissances de base en informatique.

SCPA 523 : **Communications, technologie et DÉC. Partie II** (3 crédits)
[Préalable - SCPA 522]
Ce cours dote les praticien-ne-s des compétences nécessaires pour diffuser largement les pratiques de DÉC dans des collectivités qui travaillent souvent dans l'isolement, et pour leur transmettre les compétences dont elles ont besoin afin d'utiliser les nouvelles technologies comme instruments de développement.

SCPA 529 : **Développement international et DÉC. Partie I** (3 crédits)
Ce cours examine les approches communautaires de développement économique des pays du Sud dans leur contexte socio-politique et historique. De nombreuses initiatives économiques du Nord s'inspirent de ces expériences. Le cours explore aussi les avantages et les désavantages de l'importation et de l'exportation de modèles et de pratiques de développement, et permet d'acquérir les compétences nécessaires pour évaluer l'à-propos de modèles de DÉC et les adapter, au besoin.

SCPA 530 : **Développement international et DÉC. Partie II** (3 crédits)
[Préalable - SCPA 529]
La seconde partie de ce cours explore les réseaux et la collaboration Nord-Sud en identifiant les organismes non gouvernementaux, les groupes communautaires et les mouvements sociaux qui travaillent ensemble pour formuler des stratégies de DÉC dans leur pays respectif. On encourage la discussion par des séminaires et des conférences occasionnelles.

SCPA 536 : Le DÉC en mileu autochtone. Partie I (3 crédits)
Ce cours aide les participant-e-s à étudier des enjeux spécifiques liés au développement économique autochtone, en particulier le contexte (réserve,

milieu urbain, rural ou nordique), ainsi qu'à affronter des défis fréquents en DÉC autochtone. Le cours étudie également les rapports historiques et contemporains entre les communautés autochtones et les forces culturelles et économiques prédominantes, et compare les pratiques organisationnelles et économiques traditionnelles avec les nouvelles approches que propose le DÉC.

SCPA 537 : Le DÉC en mileu autochtone. Partie II (3 crédits)
[Préalable - SCPA 536]
Ce cours utilise une approche d'étude de cas pour évaluer une ou plusieurs stratégies de développement économique communautaire en contexte autochtone. Un survol historique de cette expérience dessine le contexte qui a façonné ces stratégies autant que leurs résultats. Les approches de DÉC sont examinées dans le contexte de cette expérience particulière. Cela peut comprendre la visite de sites et des conférences occasionnelles.

Sessions ouvertes

SCPA 543 : A - Z Sessions ouvertes (1 crédit chacune)
Les thèmes et contenu des diverses sessions ouvertes sont déterminés au début de chaque année académique. Trois sessions ouvertes sont offertes chaque année (1 crédit chacune sur un total de 3 crédits). Voici quelques-uns des sujets possibles : les approches féministes en développement économique communautaire, le lobbying auprès d'instances décisionnelles, la gestion consensuelle, et la formation de coalitions et l'usage d'internet dans un but de développement communautaire - de même que des sujets liés à l'actualité.

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Tel.: 848-2424 ext. 2161; Fax: 848-4539

Sociology and Anthropology

Social and Cultural Anthropology

Faculty

The M.A. in Social and Cultural Anthropology is supported by ten anthropologists. In addition, sociologists in the department will also provide support to students with fields or topics of research which intersect with their respective expertise in sociology. Faculty members responsible for the anthropology program: ***Professors:*** Vered Amit, Sally Cole *(Graduate Program Director)*, Chantal Collard, Homa Hoodfar, David Howes, Christine Jourdan *(Chair)*, Dominique Legros; ***Associate Professors:*** Marie-Nathalie LeBlanc; ***Assistant Professor:*** Maximilian Forte; ***Canada Research Chair:*** Nigel Rapport. Sociology faculty members who provide additional support: ***Professors:*** Danielle Gauvreau, Greg Nielsen, William Reimer, Anthony Synnott; ***Associate Professors*****:** Lori Beaman, Efrosini Gavaki, Frances Shaver, Bart Simon; ***Assistant Professors:*** Meir Amor, Anouk Bélanger, Daniel Dagenais, Valérie de Courville-Nicol, Katja Neves-Graça, Shelley Reuter, Marcus Taylor, Jean-Philippe Warren.

Programs

The Department of Sociology and Anthropology offers programs leading to the degrees of Master of/Magisteriate in Arts in Social and Cultural Anthropology, and the Master of/Magisteriate in Arts in Sociology.

Program Objectives

The program is designed to provide general training in social and cultural anthropology so that graduates will be qualified to pursue further studies in anthropology at the doctoral level, or in the alternative, have acquired the inter-cultural skills they need to work effectively as consultants or mediators in multi-cultural contexts. The program is specifically designed to sensitize students to their ethical responsibilities as anthropologists, provide them with a taste of fieldwork, help them develop a critical understanding of anthropological theory, and encourage experimentation with the medium, form and style of ethnographic presentation. Students are invited to join with faculty in the reconstruction of the discipline of anthropology, and the promotion of intercultural communication and respect.

Faculty Research Interests

Faculty members have conducted research in regions throughout the globe including: the Canadian North, the American Southwest, the Caribbean, Latin America, Oceania, West Africa, the Middle East, Western Europe, and here in Quebec. Areas of specialty include: legal anthropology, economic anthropology, gender and development, kinship, religion, identity, anthropological linguistics, the senses, and the history of anthropology. Areas of innovation include: elites, individuality, transnationality, anthropology of food, culture and consumption, media, international adoption, youth culture, travel and life writing. For a more thorough description, see the departmental website.

Master of/Magisteriate in Arts (Social and Cultural Anthropology)

Admission Requirements. An undergraduate degree with honours or specialization in anthropology or joint specialization in anthropology and sociology, with a grade point average of 3.00 (B average) is required. An undergraduate degree with a major in anthropology, with a grade point average of 3.00 (B average) will be considered, provided that the background preparation is acceptable.

Applicants who lack certain prerequisite courses may be required to take a qualifying program of up to 12 undergraduate credits in addition to the regular graduate program. For the qualifying program a grade point average of 3.00 (B average) is required.

Applicants with deficiencies in their undergraduate preparation may be required to take up to 24 undergraduate independent credits.

International students must pass the TOEFL language test with a minimum score of 550. Similar scores on comparable tests are acceptable.

Applications to the program must be accompanied by a preliminary statement (roughly 750 words in length) of the student's intentions regarding research, fieldwork and thesis.

Application Deadlines. The deadline for completed applications is February 1 for the Fall term and October 1 for the Winter term.

Requirements for the Degree

1. **Credits.** A fully-qualified candidate is required to complete a minimum of 45 credits. Additional courses may be taken from outside the program, subject to the advice and approval of the student's supervisor or the Graduate Program Director.

2. **Residence.** The minimum residence requirement is one year (3 terms) of full time study, or the equivalent in part-time study.

3. **Supervision.** At the beginning of the first term of full-time or part-time study, the student is assigned an interim advisor for the duration of the first term. At the beginning of the second term in the case of full-time study, or the equivalent in terms of part-time study, the student must select a permanent thesis supervisor as well as a second faculty member to serve on the Thesis Committee. Members of the Thesis Committee evaluate the thesis. The thesis will be examined by an Examining Committee, composed of the thesis supervisor and the second committee member, and a third faculty member chosen in consultation with the Graduate Program Director. The responsibility for the composition of the Thesis Committee rests with the student in consultation with and subject to the approval of the Graduate Program Director.

4. **Language Requirement.** A working knowledge of English and French is recommended, although written work may be submitted in either language. Where appropriate, students are encouraged to acquire competence in the language of the community they choose to study; this may be achieved in the context of ANTH 640.

Academic Regulations

1. **GPA Requirement.** The academic progress of students is monitored on a periodic basis. To be permitted to continue in the program, students must obtain a cumulative Grade Point Average (GPA) of 3.00 based on a minimum of 12 credits. Students whose GPA falls below 3.00 are considered to be on academic probation during the following review period. Students whose GPA falls below 3.00 for two consecutive review periods are withdrawn from the program.

2. **C Rule.** Students in master's/magisteriate programs are allowed to receive no more than one C grade to remain in good standing in the University.

3. **F Rule.** Students who receive a failing grade in the course of their studies will be withdrawn from the program. Students may apply for readmission. Students who receive another failing grade after re-admission will be withdrawn from the program.

4. **Time Limits.** All work for a master's/magisteriate degree for full-time students must be completed within 12 terms (4 years) from the time of initial registration in the program at Concordia University; for part-time students the time limit is 15 terms (5 years).

5. **Graduation Requirement.** In order to graduate, students must have a cumulative GPA of at least 3.00.

Courses

Each student must satisfactorily complete the following program: ANTH 600, ANTH 601, ANTH 610, ANTH 620, ANTH 630, and ANTH 640 **or** ANTH 641. Each student must further complete the fieldwork and thesis component of the degree program, which is composed of ANTH 690, ANTH 691 and ANTH 692.

All courses listed below are worth 3 credits unless otherwise noted.

ANTH 600 Gender, Ethnicity and Class in Anthropological Theory
This course explores contemporary anthropological theory on gender, ethnicity and class.

ANTH 601 Inter-Cultural Theories in Anthropology
This course explores the roots of anthropological theory in Western culture and the decolonization of anthropology since the 1960s.

ANTH 610 Ethnography, Ethics and Inter-Cultural Skills
This course explores the methods used to gather ethnographic material, the ethical dynamics of the fieldwork encounter, and the duties of the anthropologist as cultural mediator.

ANTH 620 Writing Methods in Inter-Cultural Communication
This course examines a range of methods and styles for presenting ethnographic material, from ethnographic realism to fiction, and encourages further experimentation.

ANTH 630 New Developments in Inter-Cultural Research
This seminar course explores some of the ways in which recent advances in anthropological understanding can illuminate social problems and direct social policy.

ANTH 640 Special Topics I
This course/tutorial, selected in consultation with the student's thesis supervisor, may be taken from a cognate discipline, or used to enhance the student's communication skills.

ANTH 641 Special Topics II
This course, selected in consultation with the student's thesis supervisor, will be offered as the occasion arises, for example, when a faculty member returns from the field, or when a visiting professor is in residence.

ANTH 690 Thesis Tutorial
The thesis tutorial is dedicated to crafting a research proposal.

ANTH 691 Fieldwork: Stage (6 credits)
The fieldwork requirement, which may last from 3-4 months, involves undertaking research in a community which differs in important respects from the student's community of reference, and collecting ethnographic data. This research will form the basis of the student's thesis.

ANTH 692 Thesis (18 credits)
The thesis is required to demonstrate that the student has been able to carry out independent field research. It should be a work of near publishable quality, by conventional academic standards, and at the same time, an effective piece of inter-cultural communication. The thesis is evaluated by the student's Thesis Committee and one other faculty member. The student is also required to defend the thesis orally before the above-mentioned examiners.

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Sociology and Anthropology

Sociology

Faculty

The M.A. in Sociology is supported by 17 sociologists. In addition anthropologists in the department will also provide support to students with fields or topics of research which intersect with their respective expertise in anthropology. Faculty members responsible for the sociology program: ***Professors:*** Danielle Gauvreau, Greg Nielsen, William Reimer, Anthony Synnott; ***Associate Professors:*** Lori Beaman, Efrosini Gavaki, Frances Shaver, Bart Simon; ***Assistant Professors*:** Meir Amor, Anouk Bélanger, Daniel Dagenais, Valérie de Courville Nicol, Katja Neves-Graca, Shelley Reuter, Marcus Taylor, Jean-Philippe Warren. Anthropology faculty members who provide additional support: ***Professors*:** Vered Amit, Sally Cole *(Graduate Program Director)*, Chantal Collard, Homa Hoodfar, David Howes, Christine Jourdan *(Chair)*, Dominique Legros; ***Associate Professors:*** Marie-Nathalie LeBlanc; ***Assistant Professor:*** Maximilian Forte; ***Canada Research Chair:*** Nigel Rapport.

Programs

The Department of Sociology and Anthropology offers programs leading to the degrees of Master of/Magisteriate in Arts in Sociology and of Master of/ Magisteriate in Arts in Social and Cultural Anthropology.

Program Objectives

The Department of Sociology and Anthropology has offered a Master of Arts/Magisteriate of Arts degree in Sociology since 1972. The objectives of the program are to provide advanced studies in general sociology and in a wide variety of specialized fields of research for students planning to pursue a professional career in the discipline and students already engaged in occupations where such studies will be of value to their work. We emphasize pluralism in our approaches to theory and methods and encourage students to creatively and actively engage their sociological training in a wide variety of established and emerging fields. The graduate program in Sociology offers two options: a thesis option and an essay option.

In addition to the core courses in theory and methods, course offerings in the program often reflect the various fields of interest of the faculty and the research projects they pursue individually or as part of a research team in a

research center. Although all students are required to take six credits in theory and six credits in research methods and a departmental seminar, the remaining courses are elective. A balance of different elective course offerings is taught from year to year according to faculty and student interest.

Faculty Research Interests

Faculty research interests are diverse, ranging from the new rural economy and development to race and ethnic relations, comparative social history, social theory, and cultural sociology. Some examples of specific projects include the social, political and cultural impact of globalization; sex work; comparative urban cultures; the role of information technologies in mediating surveillance relations; men and masculinities; digital culture and video games; citizenship and transculturalism; the history of Canadian sociology; fear, risk and governmentality; minority religious groups; global development and labour institutions; transformations in the family. Canadian and Quebec society provide major but not exclusive research foci. For a more thorough description, see the departmental webpage.

Master of/Magisteriate in Arts (Sociology)

Admission Requirements. An undergraduate degree with honours or specialization in sociology, with a grade point average of 3.00 (B average) is required. An undergraduate degree with a major in sociology, with a grade point average of 3.00 (B average) will also be considered provided that the background preparation is acceptable. Applicants with degrees in cognate disciplines with higher grade point averages will also be considered.

Applicants who lack certain prerequisite courses may be required to take a qualifying program of up to 12 undergraduate credits in addition to the regular graduate program. For the qualifying program a grade point average of 3.00 (B average) is required.

Applicants with deficiencies in their undergraduate preparation may be required to take up to 24 undergraduate independent credits.
International students must pass the TOEFL language test with a minimum score of 550. Similar scores on comparable tests are acceptable.

Applications to the program must be accompanied by a preliminary statement (roughly 750 words in length) of the student's intentions regarding research and thesis.

Application Deadline. The deadline for completed applications is February 1 for the Fall term and October 1 for the Winter term.

Requirements for the Degree

1. **Credits.** A fully-qualified candidate is required to complete a minimum of 45 credits. Additional courses may be taken from outside the program, subject to the advice and approval of the student's supervisor or the Graduate Program Director.

2. **Residence.** The minimum residence requirement is one year (3 terms) of full-time study, or the equivalent in part-time study.

3. **Supervision.** At the beginning of the first term of full-time or part-time study, the student is assigned an interim advisor for the duration of the first term. At the beginning of the second term in the case of full-time study, or the equivalent in terms of part-time study, the student must select a permanent thesis supervisor as a second faculty member to serve on the Thesis Committee. Members of the Thesis Committee evaluate the thesis. The thesis will be examined by an Examining Committee, composed of the thesis supervisor and the second committee member, and a third faculty member chosen in consultation with the Graduate Program Director. The responsibility for the composition of the Thesis Committee rests with the student in consultation with and subject to the approval of the Graduate Program Director.

4. **Language Requirement.** A working knowledge of English and French is recommended although written work may be submitted in either language.

Academic Regulations

1. **GPA Requirement.** The academic progress of students is monitored on a periodic basis. To be permitted to continue in the program, students must obtain a cumulative grade point average (GPA) of 3.00 based on a minimum of 12 credits. Students whose GPA falls below 3.00 are considered to be on academic probation during the following review period. Students whose GPA falls below 3.00 for two consecutive review periods are withdrawn from the program.

2. **C Rule.** Students in master's/magisteriate programs are allowed to receive no more than one C grade in order to remain in good standing in the university.

3. **F Rule.** Students who receive a failing grade in the course of their studies will be withdrawn from the program. Students may apply for readmission. Students who receive another failing grade after re-admission will be withdrawn from the program.

4. **Time Limit.** All work for a master's/magisteriate degree must be completed within 12 terms (4 years) of full-time study or 15 terms (5 years) of part-time study from the time of original registration in the program.

5. **Graduation Requirement.** In order to graduate, students must have a cumulative GPA of at least 3.00.

Master of/Magisteriate in Arts in Sociology with Thesis (Option A)

Courses. Each student must satisfactorily complete the following program: SOCI 602 (3 credits), SOCI 603 (3 credits), SOCI 612 (3 credits), SOCI 613 (3 credits), SOCI 660 (3 credits), and SOCI 690 (3 credits); a course in the area of research (3 credits); one elective course (3 credits), SOCI 691 (21 credits).

Thesis. Students enrolled in the thesis option are required to demonstrate their ability to carry out independent research which reflects a scientific approach. The thesis proposal, SOCI 690 (prepared within the confines of the thesis tutorial) will serve as the basis for the elaboration of the written thesis, SOCI 691. The student will then orally defend the thesis before an examining committee. The thesis may be written in either English or French.

Master of/Magisteriate in Arts without Thesis (Essay - Option B)

Courses. Each student must satisfactorily complete the following program: SOCI 602 (3 credits), SOCI 603 (3 credits), SOCI 612 (3 credits), SOCI 613 (3 credits), SOCI 660 (3 credits), SOCI 695 (18 credits) and 12 credits of electives.

Essay. SOCI 695 (18 credits): each student is required to write the essay under the supervision of one faculty member and is evaluated by two faculty members, including the supervisor. It can either be a literature review of a substantive nature, or a report on empirical research. Students are expected to submit work of publishable or near publishable quality. The appropriate length of the essay is approximately 40 pages.

Note: 1. All students are required to plan courses related to their own interests with the help of advisors. 2. No more than 6 credits of studies taken outside the discipline may be credited towards the degree.

Courses

SOCI 602 Issues in Classical Sociological Theory
This course is designed to examine selected classical texts and analyze the work of recent interpreters and critics. During this course, we will endeavour to develop our critical understanding of the classics. In addition, we will strive to create an awareness of the diversity of readings of classical texts that will

enhance our ability to make further critical appropriations, revisions, and uses of the classical tradition. (3 credits)

SOCI 603 Issues in Contemporary Sociological Theory
This course is an in-depth study of issues in contemporary sociological theory. It is designed to foster awareness of the plurality, diversity, and divergence among contemporary readers and readings of current texts. The focus is on critical analysis of major writings representing diverse theoretical orientations in recent sociology. Attention is given to fundamental assumptions and to practical implications of given orientations and styles of sociology. (3 credits)

SOCI 612 Designing Sociological Research
This course is designed to develop skills in the logical formulation of sociological problems and the transformation of those problems into a coherent and practical research design. Topics to be addressed include: the objectives of-social research and their relationship to research strategies; data structures and their relation to theory and the nature of support; data analysis and the implications for sociological knowledge. (3 credits)

SOCI 613 Techniques of Sociological Research
The course is designed to develop skills in the critical use of a variety of research techniques and the interpretation and presentation of research results in a clear and concise manner. A number of issues relating to measurement of concepts, including: concept formation, operationalization, validity and reliability will be discussed. Various techniques of data collection and analysis will be discussed including interviewing, textual analysis, and survey analysis. (3 credits)

SOCI 660 The Departmental Graduate Seminar
This seminar offers a forum where students and faculty present their work in progress to their peers and colleagues in the department in a collegial and professional manner. This course takes place every two weeks throughout the academic year. Credit for this course is obtained on a pass/fail basis. The seminar consists of oral presentations of work by advanced students and faculty members and pedagogical and practical information on public speaking and presentation. Evaluation will be based on presentations, participation and reports on the activities that should be submitted at the end of each seminar.

SOCI 690 Thesis Tutorial
The thesis tutorial is dedicated to crafting a research proposal. This course should be taken during the first academic year of residency. (3 credit tutorial)

SOCI 691 Thesis
Students enrolled in the thesis option are required to demonstrate their ability to carry out independent research which reflects a scientific approach. The thesis proposal, SOCI 690 (prepared within the confines of the thesis tutorial)

will serve as the basis for the elaboration of the actual thesis, SOCI 691. This will take the form of a written thesis (21 credits) of at least article length. The student will then orally defend the thesis before an examining committee. The thesis may be written in either English or French.

SOCI 695 Essay
The essay is written under the supervision of one faculty member and is evaluated by two faculty members, including the supervisor. It can either be a literature review of a substantive nature, or a report on empirical research. Students are expected to submit work of publishable or near publishable quality. The appropriate length of the essay is approximately 40 pages.

Selected Topics

The offerings for the following courses will be reviewed each year in light of the interest of students and faculty members. Five elective courses are offered each academic year from the list given below. Courses numbered "700" are advanced studies and normally will be conducted on a tutorial basis. The corresponding 600-level course is a prerequisite to the 700-level course. All courses listed below are worth 3 credits unless otherwise noted.

SOCI 620/720 Population and Society
SOCI 622/722 Studies in Race and Ethnicity
SOCI 625/725 Sociology of Culture
SOCI 626/726 North American Societies
SOCI 627/727 Social Movements and Social Change
SOCI 632/732 Sociology of the Family
SOCI 633/733 Sociology of Knowledge
SOCI 635/735 Gender Studies
SOCI 637/737 Development
SOCI 638/738 The City
SOCI 639/739 Social Problems
SOCI 640/740 Community Studies
SOCI 642/742 Studies in Governance
SOCI 644/744 Sociology of the Body
SOCI 645/745 Sociology of Men
SOCI 646/746 Globalization
SOCI 647/747 Democracy and Citizenship
SOCI 648/748 Health, Illness and Medicine
SOCI 649/749 Media and Communication
SOCI 652/752 Self and Subjectivity
SOCI 653/753 Intellectual Biography

Additional Topics, Thesis, and Essay

SOCI 601 Topics in Advanced Theory
SOCI 611 Topics in Advanced Methodology

SOCI 650/750 **Special Topic in Sociology I**
SOCI 651/751 **Special Topic in Sociology II**
SOCI 691 **Thesis** (21 credits)
SOCI 695 **Essay** (18 credits)

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Theological Studies

Faculty

Professor: Pamela Bright *(Chair);* ***Associate Professors:*** Lucian Turcescu; ***Assistant Professors:*** Paul Allen, Christine Jamieson *(Graduate Program Director)*, Lorenzo DiTommaso; ***Adjunct Professor:*** Charles Kannengiesser.

Programs

The Department of Theology offers the degree of Master of/Magisteriate in Arts. There are two program options in the master's degree: Master of/ Magisteriate in Arts with thesis and Master of/Magisteriate in Arts with research papers. The Department has strong links with, and active participation in the Doctor of Philosophy (Humanities) program.

Program Objectives

The program is structured to enable students to apply contemporary methods of research to theological questions so as to arrive at valid personal knowledge. Option A in the program is centred on the preparation of a substantial thesis. It will be most useful to students who already have a rich background in Theological Studies, and who already have developed an area of special interest in Theology, perhaps with a view to eventual doctoral studies.

Option B is intended to provide the students with an opportunity to widen their knowledge of theological areas (i.e. Scripture, History, Systematic Theology, Ethics), while at the same time learning the discipline of research in two shorter research projects.

Faculty Research Interests

Faculty members have taken an interest in interpretation theory and theological methodology, and they can offer students access to special competence in the biblical periods, the patristic age, fundamental and applied ethics, spirituality, and contemporary theologians.

Master of/Magisteriate in Arts (Theological Studies)

Admission Requirements. A solid undergraduate preparation with a range of competence similar to that demanded of Major students at Concordia, and a B average in the Theology segment of their undergraduate studies. Qualified applicants requiring prerequisite courses may be required to take up to 12

undergraduate credits in addition to and as a part of the regular graduate program. Admission into the program is on recommendation of the Graduate Studies Committee.

Application Deadlines. Detailed program information may be obtained from the Department of Theological Studies, Concordia University, 7141 Sherbrooke St. West, Montreal, Quebec H4B 1R6. Applicants should apply online at: http://welcome.concordia.ca/. The deadline for completed applications for all programs is February 15 for those intending to take courses in the summer, May 15 for the fall, and October 15 for those intending to start in January.

Language Requirements. A reading ability in English and French is required. Thesis proposals which depend on special linguistic skills will be accepted only from students competent in the appropriate languages.

Requirements for the Degree

1. **Credits**. A fully-qualified candidate is required to complete a minimum of 45 credits.

2. **Residence**. The minimum residence requirement is one year (3 terms) of full-time graduate study, or the equivalent in part-time study.

3. Students may enter one of the two options, A or B, outlined below.

Academic Regulations

1. **GPA Requirement.** The academic progress of students is monitored on a periodic basis. To be permitted to continue in the program, students must obtain a cumulative grade point average (GPA) of 3.00 based on a minimum of 12 credits. Students whose GPA falls below 3.00 are considered to be on academic probation during the following review period. Students whose GPA falls below 3.00 for two consecutive review periods are withdrawn from the program.

2. **C Rule.** Students in research master's/magisteriate programs are allowed to receive no more than one C grade in order to remain in good standing in the university.

3. **F Rule.** Students who receive a failing grade in the course of their studies will be withdrawn from the program. Students may apply for readmission. Students who receive another failing grade after re-admission will be withdrawn from the program.

4. **Time Limit.** All work for a master's/magisteriate degree for full-time students must be completed within 12 terms (4 years) from the time of initial

registration in the program at Concordia University; for part-time students the time limit is 15 terms (5 years).

5. **Graduation Requirement.** In order to graduate, students must have a cumulative GPA of at least 3.00.

Option A: M.A. with Thesis

Required courses: THEO 603: Method in Theology (3 credits), THEO 604: Seminar in Ecclesiology (3 credits), THEO 685 Reading Course (6 credits).

Electives: 9 credits from THEO 620-685.

Thesis: THEO 695 Thesis Proposal (3 credits); THEO 697 Thesis (21 credits).

Option B: M.A. with Applied Project in Theology

Required courses: THEO 603: Method in Theology (3 credits), THEO 604: Seminar in Ecclesiology (3 credits)

Electives: 18 credits from THEO 620-685.

Research: THEO 691: Research Paper (12 credits), THEO 692: Applied Project in Theology (9 credits).

Courses

There will be 12 to 15 credits (4 to 5 courses) offered every year by the M.A. Program in Theological Studies. The required THEO 603 Method in Theology will be offered each year.

The courses offered are one-term, 3-credit courses unless otherwise indicated. A list designating which specific courses are to be offered in any given year, with description of content, will be compiled and distributed prior to registration.

Topic Courses

Topics in Scripture

THEO 621 Old Testament I
THEO 623 Old Testament II
THEO 627 Questions in Old Testament Research
THEO 629 Intertestament Studies
THEO 631 New Testament I
THEO 633 New Testament II
THEO 635 New Testament III

THEO 637 Questions in New Testament Research
THEO 639 Biblical Studies

Topics in Church History

THEO 641 History I
THEO 643 History II
THEO 645 History III
THEO 647 Research in History of Christian Thought
THEO 649 Questions in Christian Worship

Topics in Theology

THEO 651 Theology I
THEO 653 Theology II
THEO 655 Theology III
THEO 657 Questions in Theological Research
THEO 661 Ecclesiology I
THEO 663 Ecclesiology II
THEO 664 Ecclesiology III
THEO 667 Research In Ecclesiology
THEO 669 Theology & World Religions

Topics in Christian Ethics

THEO 671 Ethics I
THEO 673 Ethics II
THEO 675 Issues in Ethical Research

THEO 603 Method in Theology (3 credits)
The objective of this course, to be taken at the beginning of the program, is to give the students both a theoretical and a practical introduction to original research: the experience of seriously choosing a topic and a specific question, and in coming to grips with the reality of identifying the steps to be taken, the information to be collected, and so forth. The course will be the occasion of the student to choose a director for their theses, practicum, or research papers, and to begin working with a specific research director. This course will serve as the chief instrument for incorporating new students into the program.

THEO 604 Seminar in Ecclesiology (3 credits)
The objective of this seminar, to be taken in the second semester if possible, will be to introduce students to the notion of church as interpretative community, and to experience diverse ways of exploiting this notion. This seminar will also serve to bring students together, and to exchange ideas drawn from their research in diverse theology courses.

THEO 685 Reading Course (6 credits)
The reading course will serve to deepen relevant aspects of the research project in the chosen field of theological studies that normally are not covered by regularly offered courses.

THEO 691 Research Paper (12 credits)
The guided research project involves the preparation of a substantial research paper. It may be prepared in conjunction with any seminar course but will be separate from the basic course requirements.

THEO 692 Applied Project in Theology (9 credits)
The aim of this course is to give the student the opportunity to engage in critical theological reflection by frequenting a milieu where theological interpretation occurs on a regular basis (e.g. a local parish, a confessional school, a religious formation program like the Christian Training Program, religious programming in the media, etc.) in order to assess the theological models presupposed in the activity studied. The practicum will include a 3 credit reading component related to the field of study.

THEO 695 Thesis Proposal (3 credits)
Students taking Option A must submit an extended thesis proposal on a topic chosen in consultation with the thesis supervisor and approved by an advisory committee. It shall consist of a description of the state of research on the topic in question, a statement of the question underlying the thesis project, a formulation of the hypothesis to be tested, and a relevant bibliography.

THEO 697 Thesis (21 credits)
The thesis shall consist in the presentation of the research results. Each thesis shall be examined by a committee consisting of the student's supervisor and by at least two other scholars from the Department. The remaining regulations concerning the thesis examination are in accordance with the School of Graduate Studies (See Thesis Regulations).

Cognate Courses

With permission of the Graduate Program Director up to 6 credits may be chosen from graduate offerings in other Departments at Concordia or other universities. Permission of the graduate director of the respective program must also be granted.

PROGRAMS WITH SUSPENDED ADMISSION

Admission to the following programs in the Faculty of Arts and Science has been suspended. Students should consult the 1999-2000 Graduate Calendar for a detailed description of these programs.

Diploma in Early Childhood Education

Diploma in Ecotoxicology

Diploma in Library Studies

Diploma in Theological, Religious and Ethical Studies

M.Sc. and Ph.D. in Physics

FACULTY OF ENGINEERING AND COMPUTER SCIENCE

Dean
NABIL ESMAIL

Associate Dean, Graduate Studies and Research
RAMA BHAT

Associate Dean, Special Projects
TERRILL FANCOTT

Associate Dean, Undergraduate Programs and Student Affairs
WILLIAM LYNCH

Associate Dean, External Affairs
LOUISE QUESNEL

Mission Statement

The Faculty of Engineering and Computer Science participates in the development of the academic mission of Concordia University and is responsible for its implementation in the areas of Engineering and Computer Science.

The Faculty is dedicated to excellence in its programs to prepare its graduates not only to practice their professions well into the 21st century but also to participate, as good citizens with a social conscience, in national and international affairs. It is equally dedicated to the advancement of knowledge through excellent teaching, research and graduate education, and to the development of the professions of engineering and computer science. The Faculty strives to provide an environment of equal opportunity, collegiality and lively intellectual debate for all members of its community.

Programs

The Faculty of Engineering and Computer Science offers degrees of Doctor of/Doctorate in Philosophy in Building Engineering, Civil Engineering, Computer Science, Electrical and Computer Engineering and Mechanical Engineering, Master of/Magisteriate in Computer Science, Master of/Magisteriate in Applied Science in Building Engineering, Civil Engineering, Electrical and Computer Engineering, Industrial Engineering, Information Systems Security, Mechanical Engineering, and Quality Systems Engineering, Master of/Magisteriate in Applied Computer Science and Master of/Magisteriate in Engineering in Aerospace, Building Engineering, Civil Engineering, Electrical and Computer Engineering, Industrial Engineering, Information Systems Security, Mechanical Engineering, and Quality Systems Engineering and a Diploma in Computer Science. The Faculty also offers Graduate Certificates in 3D Graphics and Game Development, Building Engineering, Environmental Engineering, Mechanical Engineering, Service Engineering and Network Management, and Software Systems for Mechanical and Aerospace Engineering.

Academic Regulations

All students registered in a Faculty graduate degree program are assessed at the end of each academic year. This assessment is based on:

a. courses for which a grade point value has been assigned subsequent to their admission to their program, or in the case of reinstated students, subsequent to their reinstatement, and
b. other degree requirements, for which no grade point value is assigned, such as doctoral seminars, comprehensive examinations, doctoral research proposals and theses which are graded on a pass/fail or equivalent basis.

Standings of students are determined as follows:

1. **Good Standing.** Master's program: No failures on record and a weighted cumulative grade point average of at least 3.00 based on a minimum of 12 credits. Ph.D. program: No failures on record, a maximum of one grade below B and a weighted cumulative grade point average of at least 3.00 based on a minimum of 8 credits.

2. **Failed Standing.** Failure to meet the criteria for good standing.

3. **Reinstatement.** Subject to regulation four below, failed students may apply to the Graduate Program Director of the appropriate Department for reinstatement. Where the recommendation is to reinstate, this will be forwarded to the Dean of Graduate Studies for approval. Any special conditions will be specified at the time of reinstatement.

4. **Withdrawal.** Failed students who were previously assessed as failed must withdraw from the Faculty degree program.

5. **Graduation Requirements.** To be considered for the award of a graduate degree, students must have satisfied all degree requirements and have obtained a weighted grade point average of 3.00 based on all courses credited towards the degree and taken at Concordia subsequent to first registration in the program, and, in the case of Ph.D. students, a maximum of one grade below *B*.

Doctor of/Doctorate in Philosophy

The Doctor of/Doctorate in Philosophy program leads to the highest degree offered by the Faculty and is designed to provide students an opportunity to obtain the greatest possible expertise in their chosen field through intensive research. Advancement of analytical and/or experimental knowledge through a combination of specialized courses and a research thesis under the supervision of an experienced researcher forms the main component of the doctoral programs. Where possible, research of interest to industry is encouraged. The objectives of the Ph.D. program is to educate highly qualified researchers required for the expansion of fundamental knowledge and technological innovation through research and development, as well as the needs of institutions of higher learning.

Admission Requirements. To be considered for admission on a full-time basis, applicants normally must hold a master's degree or equivalent with high standing in engineering or computer science, or in a cognate discipline. Holders of bachelor's degree will, in general, be considered for admission to a master's program only. After completion of a minimum of two terms of full-time study, they may, upon application, be considered by the Faculty Graduate Studies Committee for admission to a Ph.D. program.

To be considered for admission on a part-time basis, applicants must hold a master's degree with high standing in engineering, computer science or a cognate discipline. Applicants should understand that admission is contingent not only upon a superior academic record, but also on the availability of a research supervisor, of relevant programs of study and research, as well as adequate laboratory and library facilities. Where applicable, an ability to write programs in a standard computer language will be assumed. Students lacking this skill will be required to register for appropriate courses. The Faculty reserves the right to require applicants to write tests of competence in English as a second language and to take any English instruction.

Requirements for the Degree

1. **Credits.** A fully-qualified candidate entering the doctoral program with a master's degree is required to complete a minimum of 90 credits. A candidate admitted beyond the bachelor's level is required to complete a minimum of 106 credits. Candidates admitted with a master's degree in a cognate discipline, or if they need additional knowledge in an area pertinent to their research, will, in general, be required to complete more than the minimum number of credits. Students may not credit any undergraduate equivalent course towards the requirements of a 90-credit or 106-credit Ph.D. program without the permission of their supervisor and of the Graduate Program Director.

2. **Residence.** For candidates admitted with a master's degree, the minimum period of residence is two years of full-time study or the equivalent in part-time study. Part-time students may be required by the Faculty Graduate Studies Committee, upon the recommendation of the supervisory committee, to carry out a portion of their research on a full-time basis. Where a candidate has been admitted with a bachelor's degree, the minimum period of residence is 36 months of full-time study after completion of the bachelor's degree.

3. **Transfer Credits.** Students may be granted transfer credit for courses taken in approved graduate studies prior to their entry into their program. A course submitted for transfer credit must be appropriate to the student's program of study at Concordia University. An application for such credit will be considered only at the time of admission.

4. **Courses.** Students admitted on the basis of a master's degree will normally be required to complete a minimum of 12 credits in course work. A student admitted on the basis of a bachelor's degree will normally be required to complete a minimum of 28 credits in course work. Students must also successfully complete the Ph.D. seminar ENCS 8011 (2 credits). Each student's program must be approved by a supervisory committee consisting of three members of faculty, including the student's research supervisor. This supervisory committee will also arrange for the student's comprehensive examination, the presentation of the doctoral research proposal, and thesis evaluation.

5. **Comprehensive Examination.** Students must take a comprehensive examination, ENCS 8501, which may be both written and oral. Normally the comprehensive examination is taken when course work has been completed and within 12 (24) months after the first registration as a full-time (part-time) student in a Ph.D. program. Students will be assessed on the basis of written and oral examinations of fundamentals related to their field of research. The comprehensive examination will normally be

administered by a committee (the Comprehensive Examination Committee) consisting of the supervisory committee, at least one member external to the candidate's program and other members appointed at the discretion of the supervisory committee. Students who fail this examination are permitted to take it a second time in the following term. Students failing a second time are withdrawn from the program. Students should consult the program regarding specific examination procedures and requirements.

6. **Doctoral Research Proposal.** Upon successful completion of the comprehensive examination, students must pass the doctoral research proposal ENCS 8511 (6 credits), within 18 (36) months after the first registration as a full-time (part-time) student in a Ph.D. program, before they are admitted to candidacy for the Ph.D. degree. Students will be assessed on the basis of written and oral presentations that must include: (i) a critical review of previous work relevant to the subject of the thesis, and (ii) a detailed research plan of action and expected milestones. Students are required to defend their doctoral research proposal before a committee that will normally be comprised of the same members as the Comprehensive Examination Committee. Students must demonstrate the viability of their project and their capacity to undertake doctoral thesis research. The proposal may be accepted, returned for modifications, or rejected. The rejection of a proposal will result in the student's withdrawal from the program. A student whose proposal is accepted will be admitted to candidacy for the Ph.D.

7. **Thesis.** Students are required to plan and carry out a suitable research, development, or design project, which leads to an advance in knowledge. The student must submit a thesis based upon this work and defend it in an oral examination. For purposes of registration, this work will be designated ENGR 8911 or COMP 8901: Doctoral Research and Thesis (70 credits). Theses will be examined by a committee consisting of the student's supervisory committee, an external examiner, and other examiners as approved by the Faculty Graduate Studies Committee and the Dean of Graduate Studies.

8. **Cross-Registration.** See the appropriate section of this calendar.

9. **Time Limit.** All work for a doctoral degree must be completed within 18 terms (6 years) of full-time study or 24 terms (8 years) of part-time study from the time of original registration in the program.

Master of/Magisteriate in Applied Science

This program is designed to provide students with an opportunity to strengthen, in some specific area or areas, the knowledge gained at the undergraduate

level, and to provide a significant introduction to research. It will appeal primarily to the student interested in full-time study.

Admission Requirements. Applicants to the M.A.Sc. program should hold a bachelor's degree in engineering or equivalent with high standing. Consideration will also be given to candidates with a degree in a cognate area with high standing; such students may be required to enroll in an extended program. In particular, applicants with a bachelor's degree in architecture will be considered for the M.A.Sc. in Building Engineering. The Faculty Graduate Studies Committee will determine the acceptability of an applicant for admission to the program and may require an applicant to take specified undergraduate courses in order to qualify for acceptance. Qualified applicants requiring prerequisite courses may be required to take such courses in addition to their regular graduate program. Applicants with deficiencies in their undergraduate preparation may be required to take a qualifying program. An ability to write simple programs in a standard computer language will be assumed. Students lacking this skill will be required to register for a course prescribed by the Graduate Program Director. This course will be taken in addition to regular degree requirements. The Faculty reserves the right to require applicants to write tests of competence in English as a second language, and to take any English instruction deemed necessary as a result of such tests.

Applications. Applications for admission from within Canada must be complete by June 1 for the Fall term, October 1 for the Winter term, and February 1 for the Summer term. Applications from outside Canada must be complete by February 15 for the Fall term, June 15 for the Winter term, and October 15 for the Summer term.

Requirements for the Degree

1. **Credits.** A fully-qualified candidate is required to complete successfully a minimum of 45 credits. For specific program requirements, refer to the relevant departmental entry in the following pages. Each individual program of study must be approved by the student's department and the Faculty Graduate Committee.

2. **Transfer Credits**. Student may be granted transfer academic credits for, in general, not more than eight credits taken in approved graduate studies prior to their entry into this program. A course submitted for transfer credits must be appropriate to the student's program of study at Concordia University. An application for such credit will be considered only at the time of admission.

3. **Cross-Registration**. A student in the program wishing to take courses under the cross-registration scheme must first obtain approval of the Faculty Graduate Studies Committee.

4. **Thesis**. Students must complete a 29-credit thesis as part of their degree requirements. The thesis must represent the results of the student's independent work after admission to the program. The proposed topic for the thesis, together with a brief statement outlining the proposed method of treatment, and the arrangement made for faculty supervision, must be approved by the Faculty Graduate Studies Committee. For purposes of registration, this work will be designated as ENGR 8901. The thesis will be evaluated by the student's supervisor(s), and at least two examiners appointed by the Faculty Graduate Studies Committee, one of whom shall be external to the student's department.

5. **Time Limit**. All work for a master's/magisteriate degree for full-time students must be completed within 12 terms (4 years) from the time of initial registration in the program at Concordia University; for part-time students the time limit is 15 term (5 years).

Master of/Magisteriate in Engineering

This program is designed to provide practicing engineers with an opportunity to strengthen and extend the knowledge they have obtained at the undergraduate level, to develop their design skills, and to enhance their ability to present technical material in written form.

Admission Requirements. Applicants to the M.Eng. Program must hold a bachelor's degree in engineering or equivalent with high standing. Applicants with a Bachelor's degree in architecture with high engineering content may also be considered for the M.Eng. program. Such students will be required to enroll in an extended program. The Faculty Graduate Studies Committee will determine the acceptability of an applicant for admission to the program and may require an applicant to take specified undergraduate courses in order to qualify for acceptance. Qualified applicants requiring prerequisite courses may be required to take such courses in addition to their regular graduate program. Applicants with deficiencies in their undergraduate preparation may be required to take a qualifying program. An ability to write simple programs in a standard computer language will be assumed. Students lacking this skill will be required to register for the appropriate course. This course will be taken in addition to regular degree requirements. The Faculty reserves the right to require applicants to write tests of competence in English as a second language, and to take any English instruction deemed necessary as a result of such tests.

Applications. Applications for admission from within Canada must be complete by June 1 for the Fall term, October 1 for the Winter term, and February 1 for the Summer term. Applications from outside Canada must be complete by February 15 for the Fall term, June 15 for the Winter term, and October 15 for the Summer term.

Requirements for the Degree

1. **Credits**. A fully-qualified candidate is required to complete successfully a minimum of 45 credits. For specific program requirements, refer to the relevant departmental entry in the following pages. Each individual program of study must be approved by the student's department.

2. **Transfer Credits**. Student may be granted transfer academic credits for, in general, not more than 12 credits taken in approved graduate studies prior to their entry into this program. A course submitted for transfer credits must be appropriate to the student's program of study at Concordia University. An application for such credit will be considered only at the time of admission.

3. **Other Courses**. A limited number of credits are recognized toward the Master of/Magisteriate in Engineering degree for courses taken under the heading Impact of Engineering on Society and for cognate courses taken from the M.B.A. program. For details refer to the relevant departmental entry in the following pages.

4. **Cross-Registration**. A student in the program wishing to take courses under the cross-registration scheme must first obtain approval of the Faculty Graduate Studies Committee.

5. **Time Limit**. All work for a master's/magisteriate degree for full-time students must be completed within 12 terms (4 years) from the time of initial registration in the program at Concordia University; for part-time students the time limit is 15 term (5 years).

Project. Depending on individual department requirements, students may choose to do one or more projects as part of their program. They do so by registering for one or more of the sequence ENGR 6971, 6981, 6991. Where students choose to carry out a multi-course project, the project will be graded by at least two professors. Students enrolled prior to Summer 2001 have the option of registering for one or more of the sequence ENGR 797, 798, 799. They are referred to pages 315 and 316 of the 2001-2002 Calendar.

ENGR 6971 Project and Report I. (4 credits) The purpose of the project report is to provide students in the M.Eng. program with an opportunity to carry out independent project work and to present it in an acceptable form. The project may consist of the following:

1. A theoretical study of an engineering problem.

2. A design and/or development project conducted at Concordia.

3. A design and/or project conducted as part of the student's full-time employment, providing the student's employer furnishes written approval for the pursuit and reporting of the project.

4. An ordered and critical exposition of the literature on an appropriate topic in engineering.

Before registration for a project course, a student must obtain written consent of a faculty member who will act as advisor for the report. A form for this consent is available in the Office of the Dean of Engineering and Computer Science.

A four-credit report is due on the last day of classes of the term (fall, winter, summer) in which it is registered. Students are expected to have a preliminary version of their report approved by their advisor before its final submission. On or before the submission deadline, students must submit three copies of the report to their advisors, who will grade the report. One copy of the report will be returned to the students, one retained by the advisors, and one by the department.

The report, including an abstract, must be suitably documented and illustrated, should be at least 5000 words in length, must be typewritten on one side of 21.5 cm by 28 cm white paper of quality, and must be enclosed in binding. Students are referred to *Form and Style: Thesis, Report, Term Papers, fourth edition by Campbell and Ballou, published by Houghton Migglin*.

ENGR 6981 Project and Report II (4 credits)

ENGR 6991 Project and Report III (5 credits)

With the permission of their Department, students in the M.Eng. Program may register for these project courses if they wish to carry out a more extended project, or if they wish to complete further projects. Each project course requires prior approval by the faculty member who has accepted to supervise the work. Students working on a multi-course project must register for the corresponding project courses in successive terms. For ENGR 6991 and multi-course projects, the report is due on the last day of classes of the last term in which they are registered. In the case of ENGR 6991 and multi-course project, three copies of the report must be submitted to the advisor on or before this deadline, and students are also required to make an oral presentation to the evaluators, and other members of the community. The report will be evaluated by the advisor and at least one other Engineering and Computer Science member of the Faculty.

Transitional Arrangements: All students admitted for or after the summer 2001 session will be subject to the new set of degree requirements. Students admitted before the summer 2001 session will retain credits already earned and will receive credits for additional activities as set out in the supplement to the 2001– 2002 graduate calendar. They will have the choice of either the old or

the new set of requirements. Old thesis and project numbers will be retained as a transitional arrangement for these students. The Graduate Program Director and student advisors will assist students in choosing how to meet the old or the new set of requirements. Students are not allowed to enroll in both old and new versions of the same course.

ENCS Building, EV006.139
Tel.: 848-2424 ext. 3205; Fax: 848-7965

Building, Civil and Environmental Engineering

Faculty

Distinguished Professors Emeriti: Dorel Feldman, Cedric Marsh, Hormoz B. Poorooshasb, Zenon Z. Zielinski; ***Professors:*** Sabah T. Alkass *(Chair),* Bala Ashtakala, Andreas Athienitis, Paul P. Fazio, Richard W. Guy, Kinh Ha-Huy *(Graduate Program Director),* Fariborz Haghighat, Adel M. Hanna, Osama Moselhi, Oscar A. Pekau, Amruthur S. Ramamurthy, Theodore Stathopoulos, Mohammed Zaheeruddin *(Associate Chair)*, Radu Zmeureanu; ***Associate Professors:*** Dominique Derome, Maria Elektorowicz *(Undergraduate Program Director),* Amin Hammad, Catherine Mulligan; ***Assistant Professors:*** Ashotush Bagchi, Zhi Chen, Khaled Galal, Michelle Nokken, Chellaiyan Rajalingham, Tarek Zayed, Attila M. Zsaki; ***Adjunct Professors***: Sami Bébawi, H. Keira, Chuhan Zhang, G. Zhang; ***Adjunct Associate Professors***: M. Abdel-Rahman, Samia Gamati, V. Gocevski, Hugues Rivard, Ngoc-Diep Vo; ***Adjunct Assistant Professors***: V. Batta, S. Kumar, H. Wu.

Programs

The Department of Building, Civil and Environmental Engineering offers a wide range of graduate programs in Building and in Civil Engineering. The Department houses the Centre for Building Studies, an interdisciplinary research centre with international recognition that played a key role in the development of the Building Engineering discipline in Canada.

Building Engineering

Program Objectives

Through its Department of Building, Civil and Environmental Engineering, Concordia University offers comprehensive programs encompassing academic training and research in building engineering, with a focus on advancing the body of technical knowledge in planning and design of built facilities, their construction processes, their operation and maintenance, and their interaction with, and impact on, the surrounding environment. These programs lead to Graduate Certificate in Building Engineering, Master of/Magisteriate in Applied Science in Building Engineering, Master of/Magisteriate in Engineering (Building), and Ph.D. in Building Engineering. These programs focus on four main subject areas: building science, building environment, building structures, and construction management.

Faculty Research Interests

The programs are geared toward meeting the needs of industry and satisfying its demand for qualified engineers with the ability to design higher quality buildings at lower costs. The Department is well equipped to achieve its objectives with a multi-disciplinary team of faculty, research and technical personnel, as well as advanced laboratory and computer facilities.

The Department has modern research and teaching laboratories for building enclosure, indoor air quality and ventilation, building science, acoustics, thermal analysis and thermal insulating materials, energy conservation, building materials, building aerodynamics, computer-aided engineering, construction engineering and management. A fabrication shop provides the necessary resources to prepare special research samples of equipment for use in research. Instrumentation and calibration facilities are also provided, and a two-storey prototype laboratory is available to accommodate full-scale assemblies used in research projects. The most recent realization is the Environmental Chamber Laboratory, designed to test new concepts in the performance of the building envelope.

Research in Building falls into seven categories: computer-aided design; performance of building envelope and materials; building environment (HVAC, acoustics, illumination, air quality); building and energy; wind effects on buildings; building structures; and construction management.

Current focal areas of research include: energy conservation in buildings; air infiltration and rain penetration of enclosure systems; durability of building materials; structural systems and components; finite element applications; performance of building envelope; indoor air quality and ventilation; acoustical performance of building elements; wind effects on buildings and building aerodynamics; performance of HVAC (heating, ventilation, air-conditioning) components; thermal environment; decision analysis and computer-aided building design; development of expert systems and decision support systems for efficient planning, design, and construction of building projects, construction automation, and construction safety.

The quality of research carried out is such that government and industry frequently award contracts to faculty members and teams in the department for product evaluation and development. This relationship has attracted significant external funding from a variety of sources. Each year, funds in the order of $1 million are used to develop special laboratory facilities, to supplement graduate fellowships and to improve services to industry.

Doctor of/Doctorate in Philosophy (Building Engineering)

See the description of the Doctor of/Doctorate in Philosophy in the general section for the Faculty of Engineering and Computer Science. When Ph.D. program profiles of individual students in Building Engineering extend into related fields such as computer science, economics, mathematics, sociology, etc., the students are required to take appropriate courses outside the Department.

Master's Programs in Building Engineering

The Department offers two 45-credit programs leading to the M.A.Sc. or M.Eng. degrees with specialization in one of the following four branches:

1. Building Science (E21, E22)
2. Building Environment (E07, E21, E23)
3. Construction Management (E21, E24)
4. Building Structures (E06, E21, E31)

Applicants lacking the appropriate engineering background will be required to enroll in an extended program of specified courses. These courses are in addition to the regular 45-credit program.

Requirements for the Degree

The requirements described here are in addition to the general degree requirements for the Master's programs in the Faculty of Engineering and Computer Science.

Master of/Magisteriate in Applied Science (Building Engineering)

Students must complete 45 credits as shown below.

Courses. Four courses (16 credits) chosen from the Engineering Courses section, approved by the student's supervisor and either the Graduate Program Director or the Chair of the Department.

Thesis. 29 credits.

Master of/Magisteriate in Engineering (Building Engineering)

Students must complete 45 credits of 6000 or 7000 level courses. The courses must be selected as follows:

1. A minimum of 21 credits chosen from one of the Course Groups in List A. This set of courses may also include the project and seminar courses ENGR 6991, BCEE 6961.
2. A minimum of 12 credits chosen from the Topic Area E35 and those Course Groups of List A other than the group chosen in (1) above. These groups of

courses could include special program courses put on for or by a given industry in conjunction with the Faculty.

3. A maximum of 12 credits chosen from the Engineering Courses section including E72 (M.B.A. courses).

List A: Course Groups in Building Engineering Program

Group 1 - Building Environment: BLDG 6611** plus courses in the Topic Areas: E07, E21, E23.
Group 2 - Building Science: BLDG 6611** plus courses in the Topic Areas: E21, E22
Group 3 - Building Structures: Topic Areas: E06, E21, E31
Group 4 - Construction Management: Topic Areas: E21, and E24

** Students who completed the undergraduate equivalent of BLDG 6611 must replace it by a course to be approved by the Graduate Program Director.

Graduate Certificate in Building Engineering

The Department of Building, Civil and Environmental Engineering offers a Graduate Certificate in Building Engineering for qualified university graduates who wish to obtain expertise in one of the following sub-disciplines within Building Engineering: Building Science, Building Envelope, Construction Management, Energy Efficiency, Indoor Environment, Rehabilitation of Urban Infrastructure and Facility Management.

The program can be completed in one to three years. Students with high standing in their bachelor program and whose academic records satisfy the requirements for good standing in the Master's Program in Building Engineering may apply for transfer to the Master's program.

Admission requirements

Applicants to a certificate must hold a bachelor's degree in engineering or architecture or equivalent with an above-average standing. The Department will recommend on the acceptability of an applicant for admission to the program and may require the applicant to do specific remedial course work to meet the program requirements.

Requirements for completion

1. **Credits**. A fully qualified candidate is required to complete a minimum of 16 credits.

2. **Courses**. Candidates in the graduate certificate program must take 12 credits of core courses in an area of concentration while the balance of 4

credits may be chosen from the elective list or other courses offered by the Department. Core courses for which credits have been credited to another certificate or program must be replaced by elective courses in the area of concentration or by other courses on special permission.

3. **Performance**. Students who have completed at least two courses will be assessed in June of each year. To be permitted to continue, students must have obtained a weighted cumulative grade point average (CGPA) of at least 2.75.

4. **Graduation**. To be eligible to graduate, students must have obtained a CGPA of at least 2.75.

Courses

Building Science. Core courses: BLDG 6611, 6621*, 6751*.
Electives: BLDG 6651*, 6721*, 6731*, 7401, ENGR 6601, 6661.

Building Envelope. Core courses: BLDG 6601, 6611, 6661.
Electives: BLDG 6061, 6071, 6591*, 6621*, 6731, 6671.

Construction Management. Core courses: BLDG 6561*, 6571, 6831*.
Electives: BLDG 6581, 6801, 6811*, 6821*, 6851, 6861.

Energy Efficiency. Core courses: BLDG 6661, 6701, 6711.
Electives: BLDG 6611, 6741, 6761, 6781, ENGR 6651, 6601, 6811.

Indoor Environment. Core courses: BLDG 6701, 6731*, 6751*.
Electives: BLDG 6111, 6661, 6721*, 6791, ENGR 6601, CIVI 6601.

Rehabilitation of Urban Infrastructure. Core courses: ENGR 6721, ENGR 6731, BLDG 6831.
Electives: BLDG 6801, 6581, 7601, CIVI 6101, CIVI 6541, MECH 6501.

Facility Management. Core course: BLDG 6631, 6561, 6711.
Electives: BLDG 6581, 6701, 6741, 6751, 6761, 6111, 6781. One course from E72 may be taken with permission from GPD.

Civil Engineering

Program Objectives

The programs in Civil Engineering aim to provide graduate students with an advanced education that is current and relevant to their chosen areas at the M.Eng. M.A.Sc. and Ph.D. levels. This includes the development of professional skills for practicing engineers as well as comprehensive training in the methods

of independent investigation for those who seek careers related to research, development and analysis and design of complex civil engineering systems.

Students also benefit from research and exchange links with universities around the world. Concordia participates in collaborative programs with the Université des Sciences et Technologies de Lille (CNRS), France, the Institute of Lowland Technology (Saga), Japan, the Indian Institute of Technology (Kanpur), India and Tsinghua University (Beijing) in China. These contacts enrich the abilities of students through the sharing of information and research projects as well as the exchange of faculty and students. They further enhance the Department's reputation as a dynamic and challenging study and research environment.

Faculty Research Interests

Graduate students in Civil Engineering at Concordia have ready access to workstations for producing computer-aided designs. The dedicated computer system provided to students is as powerful as a mainframe, and features sophisticated graphics with debugging programs. Well-equipped laboratories provide students with equipment they need to conduct research in the four major areas covered by the department: structural, geotechnical, systems and environmental engineering. Research may cover steel, reinforced concrete, geotechnical materials and analysis, soil mechanics and foundations, transportation planning and traffic studies, structural dynamics and earthquake engineering, precast and prestressed concrete, tubular and prestressed steel structures, experimental and computational hydraulics, water resources, environmental problems and waste management technology.

Structural and geotechnical engineering focuses on theoretical and applied research in areas such as the resistance of buildings, bridges and dams and their foundations to earthquakes, the behaviour of machine foundations, constitutive relationships in concrete, composite materials and soils, and experimental and computational methods in geotechnical and structural engineering.

Systems engineering research includes the study of transportation, water resource and environmental systems through experimental laboratory work as well as computer modelling and simulation.

The application of engineering solutions to environmental problems has recently opened a whole new and challenging field of research to engineers. Projects bring together expertise from various civil engineering fields to deal with the pressing problems posed by the ever-increasing amounts of both municipal and industrial wastes threatening the well-being of today's society.

The Department is actively involved in graduate research in the areas of structures, bridge engineering, earthquake engineering, geotechnical

engineering, transportation engineering, water resources and environmental engineering.

Doctor of/Doctorate in Philosophy (Civil Engineering)

See the description of the Doctor of/Doctorate in Philosophy requirements in the general section on the Faculty of Engineering and Computer Science.

Master's Programs in Civil Engineering

The Department offers two 45-credit programs leading to the M.A.Sc. or M. Eng. degrees with specialization in one of the following five branches:
1. Structural Engineering (E06, E31, E32)
2. Water Resources (E04, E33)
3. Geotechnical Engineering (E35)
4. Transportation (E03, E34)
5. Environmental Engineering (E36, E37)

Applicants lacking the appropriate background will be required to enroll in an extended program of specified courses. These courses are in addition to the regular 45-credit program.

Requirements for the Degree

The requirements described here are in addition to the general degree requirements for the Master's/Magisteriate programs in the Faculty of Engineering and Computer Science.

Master of/Magisteriate in Applied Science (Civil Engineering)

Students must complete 45 credits as shown below:
1. **Courses**. Four courses (16 credits) chosen from the Engineering Courses section, approved by the student's supervisor and either the Graduate Program Director or the Chair of the Department.

2. **Thesis**. 29 credits.

Master of/Magisteriate in Engineering (Civil Engineering)

Students must complete 45 credits of 6000 or 7000 level courses. The courses must be selected as follows:
1. A minimum of 21 credits chosen from one of the Course Groups in List B.
   This set of courses may also include the project and seminar courses ENGR 6991, BCEE 6961.

2. A minimum of 12 credits chosen from the topic area E24 and those Course Groups of List B other than the group chosen in (1) above. These groups of courses could include special program courses put on for or by a given industry in conjunction with the Faculty.

3. A maximum of 12 credits chosen from the Engineering Courses section including E72 (M.B.A. courses).

List B: Course Groups in Civil Engineering Program

Group 1 - Environmental Engineering and Water Resources:
Topic Areas: E04, E33, E36, E37

Group 2 - Geotechnical and Transportation Engineering:
Topic Areas: E03, E34, E35

Group 3 - Structural Engineering:
Topic Areas: E06, E31, E32

Graduate Certificate in Environmental Engineering

The Department of Building, Civil and Environmental Engineering offers a Graduate Certificate in Environmental Engineering in the following sub-disciplines: Industrial Waste Management, Environmental Auditing and Modelling in Environmental Systems.

The program can be completed in one to three years. Students with high standing in their bachelor program and whose academic records satisfy the requirements for good standing in the Master's Program in Civil Engineering may apply for transfer to the Master's program.

Admission requirements

Applicants to a certificate must hold a bachelor's degree in engineering with an above-average standing. The Department will recommend on the acceptability of an applicant for admission to the program and may require the applicant to do specific remedial course work to meet the program requirements.

Requirements for completion:

1. **Credits**. A fully qualified candidate is required to complete a minimum of 16 credits.
2. **Courses**. Candidates in the graduate certificate program must take 12 credits of core courses in an area of concentration while the balance of 4 credits may be chosen from the elective list or other courses offered by the Department. Core courses for which credits have been credited to another

certificate or program must be replaced by elective courses in the area of concentration or by other courses on special permission.

3. **Performance**. Students who have completed at least two courses will be assessed in June of each year. To be permitted to continue, students must have obtained a weighted cumulative grade point average (CGPA) of at least 2.75.

4. **Graduation**. To be eligible to graduate, students must have obtained a CGPA of at least 2.75.

Courses

Industrial Waste Management. Core courses: CIVI 6611, CIVI 6481, ENGR 6971.
Electives: CIVI 6641, CIVI 6491, CIVI 6651, CIVI 6621, CIVI 6631.

Environmental Auditing. Core courses: CIVI 6491, CIVI 6671, CIVI 6661.
Electives: CIVI 6481, CIVI 6631, POLI 6051, ENGR 6401, ENGR 6831.

Modelling in Environmental Systems. Core courses: CIVI 6601, CIVI 6651, CIVI 6611.
Electives: CIVI 6671, 6661, 6491, 6621, 6641, BLDG 6721, ENGR 6211.

CB Building, 1425 René Lévesque Blvd. W., CB 410
Tel.: (514) 848-2424, ext. 5367

Concordia Institute for Information Systems Engineering (CIISE)

Faculty

Professors: Prabir Bhattacharya, Mourad Debbabi (*Associate Director)*, Rachida Dssouli (*Director*), Brigitte Jaumard; ***Associate Professors:*** Amin Hammad, Amr Youssef, Yong Zeng; ***Assistant Professors:*** Chadi Assi, Abdessamad Ben Hamza, Jinbaek Kim; ***Adjunct Associate Professor:*** Roch Glitho; ***Adjunct Assistant Professor*:** Abdeslem Boukhtouta.

Objectives

The Concordia Institute for Information Systems Engineering is an interdisciplinary fundamental research and R&D learning institute, housing state-of-the-art research in innovative applications of information systems to a wide range of areas, among them telecommunications, software development, electronics, multimedia, aerospace, finance and banking, automotive, manufacturing, and building and construction management. The Concordia Institute for Information Systems Engineering offers only graduate programs.

Programs

The Concordia Institute for Information Systems Engineering offers the degrees of Master of/Magisteriate in Applied Science in Information Systems Security, Master of/Magisteriate in Engineering in Information Systems Security, Master of/Magisteriate in Applied Science in Quality Systems Engineering, Master of/Magisteriate in Engineering in Quality Systems Engineering, as well as the following Graduate Certificates: 1) Service Engineering and Network Management, and 2) 3D Graphics and Game Development.

Faculty Research Interests

The Institute produces a high level of research activity. Faculty members are involved in a wide range of research projects sponsored by both industry and government agencies in various areas of research, classified as follows: Systems Engineering, Software engineering, Middleware, Systems Security, Cryptography and Data Security, Cyber Forensics, Incident Handling, Security Evaluation, Biometrics, Communication Networks, Communication Protocols, Image Processing, 3D Graphics, Computer Vision, Pattern Recognition, Design Science, Requirements Engineering for Product Design, Tele-geo-informatics, Augmented Reality, Infrastructure and Facilities Management, Project Management, Geographic Information Systems, Statistics, Supply Chain Management, Quality Management, e-Business Systems, Decision Support Systems, RFID, Operations Research, Optimization, Artificial Intelligence.

Master of/Magisteriate in Applied Science in Information Systems Security *

Program Objectives

The academic aim of this program is to prepare students with the skills, knowledge, expertise in cutting-edge technologies; along with best practices to be security architects capable of designing, implementing, analyzing and managing the security of real-life information systems. This is a research thesis-oriented program.

Admission requirements

Applicants to the Master of/Magisteriate in Applied Science in Information Systems Security must hold a bachelor's degree or equivalent in:

- Computer Engineering
- Software Engineering
- Computer Science
- Any engineering or science discipline provided that the student has a strong background in information systems

Admission into the program is competitive and only applicants with high academic standing will be considered. Qualified applicants requiring prerequisite courses may be asked to take such courses in addition to their regular graduate program. The Faculty Graduate Studies Committee, in consultation with the Institute, is responsible for the recommendation of all applications for admission.

The Faculty reserves the right to require applicants to write tests of competence in English as a second language, and to take any English instruction deemed necessary as a result of such tests.

Application Deadline. Applications for admission from within Canada must be complete by June 1 for the Fall term, October 1 for the Winter term and February 1 for the Summer term. Applications from outside Canada must be complete by February 15 for the Fall term, June 15 for the Winter term and October 15 for the Summer term.

Residence requirements. The minimum residence requirement for the Master's degree is three terms (one year) of full-time study, or the equivalent in part-time study.

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* This program has been approved by Concordia University's Senate and is subject to the approval of the MELS.

Transfer from the Master of Engineering in Information Systems Security. Students, in good standing, who have completed a minimum of 12 credits in the Master of Engineering in Information Systems Security, may apply for a transfer to the Master of Applied Science in Information Systems Security.

Degree requirements

The requirements described here are in addition to the general degree requirements for the Master's programs in the Faculty of Engineering and Computer Science.

In order to graduate, students must have a CGPA of at least 3.00.

1. **Program of Study.** The student will follow the proposed course sequence. In addition, students have to consult with their supervisor for selecting a research topic. Students can enter this program as Co-op students. See item 6. Thesis.

2. **Credits.** A fully qualified candidate is required to successfully complete a minimum of 45 credits. Additional credits may be required in some cases.

3. **Transfer Credits.** Students may be granted transfer academic credits for, in general, not more than eight credits taken in approved graduate studies prior to their entry into this program. A course submitted for transfer credit must be appropriate to the student's program of study at Concordia University. An application for such credit will be considered only at the time of admission.

4. **Time Limit.** All work for this M.A.Sc. degree for full-time students must be completed within 12 terms (four years) from the time of initial registration in the program at Concordia University; for part-time students the time limit is 15 terms (five years).

5. **Courses.** Students must take a total of 20 credits of course work in the topic area E69 Information Systems Security.

6. **Thesis.** Students must complete a 25-credit thesis as part of their degree requirements. The thesis must represent the results of the student's independent work after admission to the program. The proposed topic for the thesis, together with a brief statement outlining the proposed method of treatment, and the arrangement made for faculty supervision, must be approved by the Faculty Graduate Studies Committee. For purposes of registration, this work will be designated as INSE 8901. The thesis will be evaluated by the student's supervisor(s), and at least two examiners appointed by Faculty Graduate Studies Committee, one of whom shall be external to the student's department.

Students have the option to do the thesis work within the industrial milieu through the Institute of Cooperative Education. The suggested schedule of the program is as follows: fall and winter terms will be dedicated to course work, followed by two or three terms for research and development in industry, culminating in one or two terms in the Institute for the writing and defence of the thesis. Each student in this case will have a supervisor from the Institute and a mentor from industry. The intellectual property will be managed according to the University policy.

Master of/Magisteriate in Engineering in Information Systems Security *

Program Objectives

The academic aim of this program is to prepare students with the skills, knowledge, expertise in cutting-edge technologies and best practices to be security architects capable of designing, implementing, analyzing and managing the security of real-life information systems. This is a course-based program.

Admission requirements

Applicants to the Master of/Magisteriate in Engineering in Information Systems Security must hold a bachelor's degree or equivalent in:

- Computer Engineering
- Software Engineering
- Computer Science
- Any engineering or science discipline provided that the student has a strong background in information systems

Admission into the program is competitive and only applicants with high academic standing will be considered. Qualified applicants requiring prerequisite courses may be asked to take such courses in addition to their regular graduate program. The Faculty Graduate Studies Committee, in consultation with the Institute, is responsible for the recommendation of all applications for admission.

The Faculty reserves the right to require applicants to write tests of competence in English as a second language, and to take any English instruction deemed necessary as a result of such tests.

Application Deadline. Applications for admission from within Canada must be complete by June 1 for the Fall term, October 1 for the Winter term and

* This program has been approved by Concordia University's Senate and is subject to the approval of the MELS.

February 1 for the Summer term. Applications from outside Canada must be complete by February 15 for the Fall term and June 15 for the Winter term, and October 15 for the Summer term.

Residence requirements. The minimum residence requirement for the Master's degree is three terms (one year) of full-time study, or the equivalent in part-time study.

Degree Requirements

The requirements described here are in addition to the general degree requirements for the Master's programs in the Faculty of Engineering and Computer Science.

In order to graduate, students must have a CGPA of at least 3.00.

1. **Credits.** A fully qualified candidate is required to successfully complete a minimum of 45 credits. Additional credits may be required in some cases.

2. **Transfer Credits.** Students may be granted transfer academic credits for, in general, not more than eight credits taken in approved graduate studies prior to their entry into this program. A course submitted for transfer credits must be appropriate to the student's program study at Concordia University. An application for such credit will be considered only at the time of admission.

3. **Time Limit.** All work for this M.Eng. degree for full-time students must be completed within 12 terms (four years) from the time of initial registration in the program at Concordia University; for part-time students the time limit is 15 terms (five years).

4. **Courses.** Students must take a total of 45 credits of course work including a minimum of 28 credits chosen from the Concordia Institute for Information Systems Engineering's graduate courses.

   The breakdown of the 45 credits is as follows:
   - Twenty credits from five core courses from the topic area E69 Information Systems Security.
   - Twenty credits of elective courses selected from the following areas:
     C04 – Software Systems and Languages
     E01 – Mathematical Methods
     E47 – Signal Processing
     E48 – Computer Engineering
     E63 – Project and report
     E70 – Information Systems Engineering
     E71 – Computer Science Program

- Five credits for a project or an elective four-credit course and one-credit seminar course. The topic of the project should be in the area of Information systems Security.

Master of/Magisteriate in Applied Science in Quality Systems Engineering *

Program Objectives

The academic aim of this program is to prepare students with the skills, knowledge, expertise in cutting-edge technologies and best practices necessary for designing, modelling, analyzing, implementing and managing quality systems. This is a research thesis-oriented program.

Admission Requirements

Applicants to the Master of/Magisteriate in Applied Science in Quality Systems Engineering program must hold a bachelor's degree or equivalent in:

- Mechanical Engineering
- Industrial Engineering
- Electrical Engineering
- Building Engineering
- Civil Engineering
- Environmental Engineering
- Software Engineering
- Computer Science
- Any engineering or science discipline provided that the student has the appropriate background

Admission into this program is competitive and only applicants with high academic standing will be considered. Qualified applicants requiring prerequisite courses may be asked to take such courses in addition to their regular graduate program. The Faculty Graduate Studies Committee, in consultation with the Institute, is responsible for the recommendation of all applications for admission.

The Faculty reserves the right to require applicants to write tests of competence in English as a second language, and to take any English instruction deemed necessary as a result of such tests.

Application Deadline. Applications for admission from within Canada must be complete by June 1 for the Fall term, October 1 for the Winter term and February 1 for the Summer term. Applications from outside Canada must be complete by

* This program has been approved by Concordia University's Senate and is subject to the approval of the Ministry of Education.

February 15 for the Fall term, June 15 for the Winter term and October 15 for the Summer term.

Residence Requirements. The minimum residence requirement for the Master's degree is three terms (one year) of full-time study, or the equivalent in part-time study.

Transfer from the Master of Engineering in Quality Systems Engineering. Students, in good standing, who have completed a minimum of 12 credits in the Master of Engineering in Quality Systems Engineering, may apply for a transfer to the Master of Applied Science in Quality Systems Engineering.

Degree Requirements

The requirements described here are in addition to the general degree requirements for the Master's programs in the Faculty of Engineering and Computer Science.

In order to graduate, students must have a CGPA of at least 3.00.

1. **Program of Study.** The student will follow the proposed course sequence. In addition, students have to consult with their supervisor for selecting a research topic. Students can enter this program as Co-op students. See item 6. Thesis.

2. **Credits.** A fully qualified candidate is required to successfully complete a minimum of 45 credits. Additional credits may be required in some cases.

3. **Transfer Credits.** Students may be granted transfer academic credits for, in general, not more than eight credits taken in approved graduate studies prior to their entry into this program. A course submitted for transfer credit must be appropriate to the student's program of study at Concordia University. An application for such credit will be considered only at the time of admission.

4. **Time Limit.** All work for this M.A.Sc. degree for full-time students must be completed within 12 terms (four years) from the time of initial registration in the program at Concordia University; for part-time students the time limit is 15 terms (five years).

5. **Courses.** Students must take a total of 20 credits in course work. These include the three core courses specified in area E68 Quality Systems Engineering and two courses selected from the program elective courses in the same topic area. In addition, students must take a non-credit seminar course.

6. **Thesis.** Students must complete a 25-credit thesis as part of their degree requirements. The thesis must represent the results of the student's independent work after admission to the program. The proposed topic for the thesis, together with a brief statement outlining the proposed method of treatment, and the arrangement made for faculty supervision, must be approved by the Faculty Graduate Studies Committee. For purposes of registration, this work will be designated as INSE 8901. The thesis will be evaluated by the student's supervisor(s), and at least two examiners appointed by the Faculty Graduate Studies Committee, one of whom shall be external to the student's department.

Students have the option to do the thesis work within the industrial milieu through the Institute of Cooperative Education. The suggested schedule of the program is as follows: Fall and Winter terms will be dedicated to course work, followed by two or three terms for research and development in industry, culminating in one or two terms in the Institute for the writing and the defence of the thesis. Each student in this case will have a supervisor from the Institute and a mentor from industry. The intellectual property will be managed according to the University policy.

Master of/Magisteriate in Engineering in Quality Systems Engineering *

Program Objectives

The academic aim of this program is to prepare students with the skills, knowledge, expertise in cutting-edge technologies and best practices necessary for designing, modelling, analyzing, implementing and managing quality systems. This is a course-based program.

Admission Requirements

Applicants to the Master of/Magisteriate in Engineering in Quality Systems Engineering program must hold a bachelor's degree or equivalent in:

- Mechanical Engineering
- Industrial Engineering
- Electrical Engineering
- Building Engineering
- Civil Engineering
- Environmental Engineering
- Software Engineering
- Computer Science

* This program has been approved by Concordia University's Senate and is subject to the approval of the Ministry of Education.

- Any engineering or science discipline provided that the student has the appropriate background

Admission into this program is competitive and only applicants with high academic standing will be considered. Qualified applicants requiring prerequisite courses may be asked to take such courses in addition to their regular graduate program. The Faculty Graduate Studies Committee, in consultation with the Institute, is responsible for the recommendation of all applications for admission.

The Faculty reserves the right to require applicants to write tests of competence in English as a second language, and to take any English instruction deemed necessary as a result of such tests.

Application Deadline. Applications for admission from within Canada must be complete by June 1 for the Fall term, October 1 for the Winter term and February 1 for the Summer term. Applications from outside Canada must be complete by February 15 for the Fall term, June 15 for the Winter term and October 15 for the Summer term.

Residence Requirements. The minimum residence requirement for the Master's degree is three terms (one year) of full-time study, or the equivalent in part-time study.

Degree Requirements

The requirements described here are in addition to the general degree requirements for the Master's programs in the Faculty of Engineering and Computer Science.

In order to graduate, students must have a CGPA of at least 3.00.

1. **Credits.** A fully qualified candidate is required to successfully complete a minimum of 45 credits. Additional credits may be required in some cases.

2. **Transfer Credits.** Students may be granted transfer academic credits for, in general, not more than eight credits taken in approved graduate studies prior to their entry into this program. A course submitted for transfer credit must be appropriate to the student's program of study at Concordia University. An application for such credit will be considered only at the time of admission.

3. **Time Limit.** All work for this M.Eng. degree for full-time students must be completed within 12 terms (four years) from the time of initial registration in the program at Concordia University; for part-time students the time limit is 15 terms (five years).

4. **Courses.** Students must take a total of 45 credits of course work including a minimum of 28 credits chosen from the Concordia Institute for Information Systems Engineering's graduate courses. In addition, students must take a non-credit seminar course.

   The breakdown of the 45 credits is as follows:
   - Twelve credits from core courses in topic area E68
   - Eight credits from two courses selected from the program elective courses in topic area E68
   - Twenty credits in courses from all topic areas from departments within the Faculty of Engineering and Computer Science
   - Five credits for a project or an elective four-credit course and one-credit seminar course. The topic of the project should be in the area of Quality Systems Engineering.

Graduate Certificate in Service Engineering and Network Management

Admission Requirements

The admission requirement will be a Bachelor of Engineering or Computer Science with a CGPA of at least 3.00 or equivalent as well as a good knowledge in software engineering/development. The Institute will recommend on the acceptability of an applicant for admission to the program and may require the applicant to do specific remedial course work to meet the program requirements.

Requirements for Completion:

1. **Credits.** A minimum of 20 credits.

2. **Courses.** Candidates in the graduate certificate program must take 16 credits of core courses while the balance of 4 credits may be chosen from the elective list or other courses offered by the Institute or other ENCS departments.

3. **Good Standing.** Students who have completed at least two courses will be assessed in June of each year. To be permitted to continue, students must have obtained a weighted cumulative grade point average (CGPA) of at least 3.00.

4. **Graduation.** To be eligible to graduate, students must have obtained a CGPA of at least 3.00.

5. **Courses**

Core courses

INSE	**7100**	**Design & Analysis of Security Protocols**
ELEC	**6861**	**Higher Layer Telecommunications Protocols**
INSE	**7110**	**Value Added Service Engineering in Next Generation Networks**
INSE	**7120**	**Advanced Network Management**

Electives

INSE	**6100**	**Advanced Java Platforms**
COMP	**6471**	**Software Design Methodologies**
COEN	**7311**	**Protocol Design and Validation**
COMP	**7231**	**Distributed Computer Systems**

Prerequisites

Special Permission must be obtained from the Concordia Institute for Information Systems Engineering.

Graduate Certificate in 3D Graphics and Game Development

Admission Requirements

The admission requirement will be a Bachelor of Engineering or Computer Science with a CGPA of at least 3.00 or equivalent, as well as knowledge in software engineering/development. The Institute will recommend on the acceptability of an applicant for admission to the program and may require the applicant to do specific remedial course work to meet the program requirements.

Requirements for Completion:

1. **Credits.** A minimum of 16 credits.

2. **Courses.** Candidates in the graduate certificate program must take 16 credits of the following core courses:

INSE	**6510**	**Video Game Technology and Development**
COMP	**6761**	**Advanced 3D Graphics for Game Programming**
INSE	**6530**	**3D Graphics and Computer Animation for Game Design**
COMP	**7661**	**Advanced Rendering and Animation for 3D Games**

Prerequisites

Special Permission must be obtained from the Concordia Institute for Information Systems Engineering.

3. **Good Standing.** Students who have completed at least two courses will be assessed in June of each year. To be permitted to continue, students must have obtained a weighted cumulative grade point average (CGPA) of at least 3.00.

4. **Graduation.** To be eligible to graduate, students must have obtained a CGPA of at least 3.00.

ENCS Building, EV 5.139
Tel.: 848-2424, ext. 3103; Fax: 848-2802

Electrical and Computer Engineering

Faculty

Distinguished Professors Emeriti: Jeremiah F. Hayes, Stanley J. Kubina; ***Research Professor:*** M.N.S. Swamy, ***Professors:*** M. Omair Ahmad, Asim J. Al-Khalili, Ahmed K. Elhakeem, Khashayar Khorasani, Mustafa K. Mehmet Ali, Robert Paknys, Eugene I. Plotkin, Venkat Ramachandran, Abdel R. Sebak, M. Reza Soleymani, Christopher W. Trueman; ***Associate Professors:*** Anjali Agarwal *(Undergraduate Program Director)*, Ali Ghrayeb, Mojtaba Kharizi *(Graduate Program Director)*, Nawwaf N. Kharma *(Co-op Director)*, Ferhat Khendek, Luiz Lopes, William E. Lynch, Rabin Raut, Saed Samadi, Yousef R. Shayan (*Chair*), Sofiène Tahar *(Director of Laboratories)*, Chunyan Wang, John Zhang, Wei-Ping Zhu; ***Assistant Professors:*** Amir G. Aghdam, Otmane Ait Mohamed, Aishy Amer, Vijaya Devabhaktuni, Abdeslam En-Nouaary, Peyman Gohari, Walaa Hamouda, Shahin Hashtrudi Zad, Dongyu Qiu, Katarzyna Radecka, Xiaofeng Wang; ***Adjunct Professors:*** Dhamin Al-Khalili, Geza Joos, Michel Kadoch, Tho Le-Ngoc, Jens Lienig, Behrooz Nowrouzian, Rajnikant V. Patel, Hari C. Reddy, Otto Schwelb, Vijay K. Sood; ***Adjunct Associate Professors:*** Rajeev Agarwal, Tayeb A. Denidni, Qihong Fan, Christian S. Gargour, Ronggang Qi, Venkata Rambhatla, Chongjin Xie, Jun Yang; ***Adjunct Assistant Professors:*** Sonia Aissa, Mohammad Reza Chaharmir, Sadegh Jahanpour, Afshin Haghighat, Manijeh Khataie, Mohamed Nekili, Zeljko Zeilic.

Programs

The Department of Electrical and Computer Engineering offers the degrees of Doctor of/Doctorate in Philosophy (Ph.D.), Master of/Magisteriate in Engineering (M.Eng.) and Master of/Magisteriate in Applied Science (M.A.Sc.).

Program Objectives

The goal of our graduate programs is to train highly qualified personnel to fulfill the needs of industry and academia. The graduate certificate is designed to raise engineers' level of knowledge in specific disciplines. The course-based M.Eng. program is geared towards practicing engineers who wish to augment their knowledge, use their experience, and enhance their design and technical skills. The M.A.Sc. and Ph.D. programs aim at developing research skills by combining course work and original research work carried out under the supervision of one or more faculty members.

Faculty Research Interests

The Department produces a high level of research activity. Its faculty is involved in eleven areas of research, classified as follows: systems, control and robotics; circuits and systems; communications; computer communications and protocols; signal processing; high performance architecture; software engineering; VLSI systems; microelectronics; microwave and optoelectronics; antennas and electromagnetic compatibility; power electronics and adjustable speed drives. Currently, this research benefits from more than 1.5 million dollars in annual funding. Faculty members and graduate students have had a large number of research papers published in refereed journals and conferences, some of which have won international awards for excellence.

Doctor of/Doctorate in Philosophy (Electrical and Computer Engineering)

See the description of the Doctor of/Doctorate in Philosophy requirements in the general section on the Faculty of Engineering and Computer Science.

Master's Programs in Electrical and Computer Engineering

Requirements for the Degree

The requirements described here are in addition to the general degree requirements for the Master's/Magisteriate Programs in the Faculty of Engineering and Computer Science.

Master of/Magisteriate in Applied Science (Electrical and Computer Engineering)

Students must complete 45 credits as shown below.

1. **Courses.** A minimum of 16 credits chosen from the *Engineering Courses* section, approved by the student's supervisor and either the Graduate Program Director or the chair of the department.

2. **Thesis**. 29 credits.

Master of/Magisteriate in Engineering (Electrical and Computer Engineering)

Students must complete 45 credits distributed as follows:
A minimum of 36 credits consisting of 6000 numbered courses chosen from Topic Areas: E01, E03, E10, E42, E43, E44, E45, E47, E48, F03, and ELEC/COEN courses in E02.

The remaining credits are chosen from seminar and projects in E63. These credits may be taken from the *Engineering Courses* section with the permission of the Department on a case-by-case basis.

ENCS Building, EV 2.279
Tel.: (514) 848-2424 x. 3072

General Studies Unit (GSU)

Faculty

Louise Quesnel *(Interim Director);* ***Professor:*** Christopher Trueman (*Acting Chair*); ***Assistant Professrsr:*** *Deborah Dysart-Gale, Jessica Mudry;* ***Lecturers:*** Nancy Acemian, Aiman Hanna.

Objectives

The General Studies Unit (GSU) administers common engineering and computer science courses.

ENCS Building, EV 4.150
Tel.: 838-2424, ext. 3131; Fax: 848-3175

Mechanical and Industrial Engineering

Faculty

Distinguished Professors Emeriti: Richard M.H. Cheng, Sui Lin, Hugh J. McQueen, Mohamed O.M. Osman; ***Professor Emeritus***, Vojislav N. Latinovic, ***Associate Professors Emeriti:*** Kalman I. Krakow, Rafik Neemeh; ***Professors:*** A.K. Waizuddin Ahmed, Rama B. Bhat, Nabil Esmail, Suong Van Hoa *(Chair)*, Subhash Rakheja, Georgios H. Vatistas; ***Associate Professors:*** Akif A. Bulgak, Mingyuan Chen *(Associate Chair*), Kudret Demirli, Rajamohan Ganesan, Wahid S. Ghaly, Gerard J. Gouw, Ibrahim Hassan, *(Graduate Program Director)*, Henry Hong, Marius Paraschivoiu, *(Director, M.Eng. Aerospace Program),* Martin Pugh *(Undergraduate Program Director)*, Ion Stiharu, Chun Yi Su; ***Assistant Professors:*** Ali Akgunduz, Nadia Bhuiyan, Zezhong Chen, Javad Dargahi, Ali Dolatabadi, Brandon W. Gordon, Mamoun Medraj, Muthukumaran Packirisamy, Luis Rodrigues, Ramin Sedaghati *(Co-op Program Director)*, Kamran Siddiqui, Narayanswamy Sivakumar, Paula Wood-Adams; Wen Fang Xie, ***Adjunct Professors:*** Ebrahim Esmailzadeh, Virendra K. Jha, Cheung-Kuei Jen, Hany Moustapha, Marc Richard; ***Adjunct Associate Professors:*** Paul-Émile Boileau, Antonios Georgantas, Osama Hunaidi, Elena Konopleva, Minh-Tan Ton-That; ***Adjunct Assistant Professors:*** Farhad Aghili, Nabil Aouf, Jafar Arghavani, Alfred Chun-Ki Ng, Serafettin Engin, Medhat Hojjati, Ashok Kaushal, Pierre Marcotte, Darius Nikanpour, Yuu Ono, Camille Rabbath, Marc J. Richard, Yvan Sousy.

Programs

The Department of Mechanical and Industrial Engineering offers the degrees of Doctor of/Doctorate in Philosophy (Mechanical Engineering), Master of/ Magisteriate in Engineering (Mechanical Engineering), Master of/Magisteriate in Applied Science (Mechanical Engineering), Master of/Magisteriate in Engineering (Aerospace), Master of/Magisteriate in Engineering (Industrial Engineering), Master of/Magisteriate in Applied Science (Industrial Engineering), a Graduate Certificate in Mechanical Engineering and a Graduate Certificate in Software Systems for Mechanical and Aerospace Engineering.

Program Objectives

With an international reputation and world-class research programs, the Department is at the forefront of research and graduate training in Mechanical and Industrial Engineering in Canada. The success of the Department is based, in great part, on the research capabilities of the faculty and their graduate students. This excellence is acknowledged and fostered through funding from

external sources. The Department's internationally-renowned faculty, state-of-the-art laboratories and well-established research centres and laboratories for industrial control, computer-aided vehicle engineering, composites and computational fluid dynamics, attract Canadian and foreign students from a diversity of cultures and backgrounds.

At the graduate level, the Department of Mechanical and Industrial Engineering addresses the professional, career- and research-oriented educational needs of engineers and scientists through the Graduate Certificates, M.Eng. in Aerospace, M.Eng. and M.A.Sc. in Mechanical Engineering, M.Eng. and M.A.Sc. in Industrial Engineering, and Ph.D. in Mechanical Engineering.

The Graduate Certificates are designed to provide practicing engineers the opportunity to obtain knowledge in five (5) specialized areas within a short time. This stream requires the student to complete four courses in the area of concentration.

The M.Eng. programs are designed to provide practicing engineers the opportunity to strengthen and extend knowledge they acquired at the undergraduate level, to further develop their analytical and design skills, and to enhance their ability to comprehend and solve complex and advanced technology concepts. Applicants to the M.Eng. programs must have completed a Bachelor's degree in engineering with high standing. These programs are entirely course work oriented; however, within the frame of these courses a student may elect to take project course(s).

The M.A.Sc. programs are designed to provide the students with an opportunity to enhance specific areas of knowledge gained at the undergraduate level, and to introduce them to research aimed at the acquisition of new scientific knowledge for the purpose of advancing the design of technological systems. Applicants to the M.A.Sc. programs must have completed a Bachelor's degree in Engineering with high academic standing. These programs are thesis oriented; however, the student must take several credits of course work.

The Ph.D. program in Mechanical Engineering is designed to provide advanced studies and research in the theoretical foundation of the discipline and its applications. The main objective of the Ph.D. program is for candidates to demonstrate ability to carry out high-quality independent research, culminating in a thesis presentation and defence. To be eligible for admission to the Ph.D. program, applicants must have completed a Master's degree with high standing in either engineering, computer science, or in a cognate discipline.

Faculty Research Interests

The Department is involved in a wide range of fundamental and applied research projects sponsored by both industry and government in the areas of: computational fluid dynamics; industrial control systems and robotics; composites; mechanical systems and manufacturing; microfabrication and micromechatronics; thermo-fluid and propulsion; biomedical and human factors engineering; vehicle systems engineering; new product development processes; manufacturing system analysis; flexible and cellular manufacturing; production and inventory planning; intelligent manufacturing, operations planning and quality control; operations research; network and supply chain management; combinatorial optimization; safety engineering; virtual manufacturing and design; simulation; and airline revenue management. Numerous laboratories for computer-aided design, computer-integrated manufacturing, robotics, ergonomics, composite materials and structures, fluid mechanics, gas dynamics, computational fluid dynamics, machine tools, flight simulation and control, fuel control, heating and air conditioning systems, vibration, rotor dynamics, vehicle dynamics and heat transfer. Fuzzy systems, and virtual manufacturing are available.

A. Graduate Degrees in Mechanical and Industrial Engineering

1. Mechanical Engineering

Doctor of/Doctorate in Philosophy (Mechanical Engineering)

See the description of the Doctor of/Doctorate in Philosophy requirements in the general section on the Faculty of Engineering and Computer Science.

Master's Programs in Mechanical Engineering

The Department offers two 45-credit programs leading to M.A.Sc. or M.Eng. degrees in Mechanical Engineering.

Requirements for the Degree

The requirements described here are in addition to the general degree requirements for the Master's Programs in the Faculty of Engineering and Computer Science.

Master of/Magisteriate in Applied Science (Mechanical Engineering)

Students must complete 45 credits as shown below:

1. **Courses.** (16 credits) chosen from the *Engineering Courses* section, approved by the student's supervisor and either the Graduate Program Director or the Chair of the Department.

2. **Thesis**. 29 credits.

Master of/Magisteriate in Engineering (Mechanical Engineering)

Students may specialize in one of the following branches: 1. Industrial Control Systems; 2. Materials and Composites; 3. Mechanical Systems; 4. Thermofluid Engineering. Students must complete 45 credits in courses. Courses must be selected as follows:

1. A minimum of 16 credits chosen from the courses listed in one of the following specialization areas:
   - **Industrial Control Systems**: MECH 6021, 6061, 6071, 6621, 6631; ENGR 6301, 6411.
   - **Materials and Composites**: MECH 6441, 6501, 6511, 6521, 6561, 6581.
   - **Mechanical Systems**: MECH 6431, 6481, 6751, 7711; ENGR 6301, 6311.
   - **Thermofluids Engineering:** MECH 6111, 6121, 6131, 6171, 6181; ENGR 6201, 6261.

2. A minimum of 20 credits chosen from Topic Areas E01, E03, E04, E05, E06, E10, E11‡, E12, E51, E52, E53, E54, E55‡, E56, E57, MECH courses in E02, ENGR 6971, ENGR 6981, and ENGR 6991.

3. The remaining credits may be chosen from:
   - Graduate seminar in Mechanical and Industrial Engineering, ENGR 7011 (1 credit)
   - Courses chosen from other Topic Areas in the *Engineering Courses* section. (The student must obtain written approval from the Department that offers the course).

‡ Students must obtain approval from the Aerospace Program Director for all the courses listed in topic area E11 and for the courses: MECH 6091, 6231, 6241 and 7221 listed in topic area E55.

Master of/Magisteriate in Engineering (Aerospace)

This program is specially designed for those students who wish to specialize in Aerospace Engineering and is offered in cooperation with other Quebec universities (École Polytechnique, École Technologie Supérieur, Laval, McGill and Sherbrooke) and aerospace industries (Bombardier, Bell Helicopter-Textron, CAE, Canadian Marconi Co., Canadian Space Agency, EMS Technologies, Pratt & Whitney Canada, Rolls Royce Canada, and others). It is coordinated by the Comité industries/universités sur la maîtrise en génie aéronautique et spatial (CIMGAS), which has representatives from all participating universities, aerospace industries of Quebec, and the Centre d'adaptation de la main-d'oeuvre aérospatiale au Québec (CAMAQ). The

aerospace industry provides direct and indirect support to the program and closely collaborates in the training of the students.

Students can specialize in the following areas: Aeronautics and Propulsion, Avionics and Control, Structures and Materials, and Space Engineering.

Admission Requirements. Applicants must hold a bachelor's degree in engineering or equivalent with high standing. For further details, refer to the section *Admission Requirements* for Master of/Magisteriate in Engineering in the appropriate pages of the graduate calendar.

Applications. Applications for admission must be complete and received by June 1 for the fall term, October 1 for the winter term, and February 1 for the summer term.

Requirements for the Degree

Students must complete a minimum of 45 credits of academic work consisting of: 36 credits of course work in the 600 or 700 level (2 courses must be taken outside Concordia), Aerospace Case Study (minimum 3 credits) and an Industrial Stage (6 credits). The selection of courses must be approved by the program director. For course prerequisites, refer to the course descriptions.

Note: Some graduate courses are content equivalent with specified undergraduate courses. These courses are not available for credit to students who have completed the undergraduate equivalent. Refer to the course description where such courses are marked with an (*).

1. **General/Preparatory Core Courses.** Normally, 12 credits are required to be completed from the list provided below. Any request for change on this requirement must be approved by the program director. Depending on the background, it may be required for the student to complete certain specified preparatory courses as part of their program.

   ENCS 6021, 6141; ENGR 6111, 6121, 6131, 6181, 6201, 6421, 6441, 6451, 6461, 6501; MECH 6481.

2. **Specialization Courses.** 24 credits are to be completed from the specialization courses in one or more of the areas listed below. For other courses available from the participating universities, consult their listings.

   Students should consult the program director at their home university for the selection of courses to suit their area of specialization and need not confine their choice to any one area. A minimum of two courses are to be taken outside of Concordia (minimum 3 credits per course), at least one each from any two of the participating universities (refer to the list of courses

below). A second Aerospace Case Study course may be considered as a specialization course.

Aeronautics and Propulsion.
ENGR 6251, 6261; MECH 6081, 6111, 6121, 6161, 6171, 6191, 6211, 6221, 6231, 6241.

McGill University: Mech 532 (Aircraft Performance, Stability and Control), Mech 537 (Aerodynamics).

Avionics and Control.
ENCS 6161; ELEC 6121, 6301, 6321, 6361, 6381, 6511, 6601, 7111, 7121, 7341, 7531;
ENGR 6181, 6411, 7401, 7461; MECH 6061, 6091, 6251, 6621;

École Polytechnique: ELE6208 (Dynamique du vol et auto-pilotage).

McGill University: 304-593B (Antennas and Propagation), Com 538 (Person-Machine Communication).

Note: Students may not take both ELEC 6511 and MECH 6621.

Structures and Materials.
ENGR 6311, 6511, 6521, 6531, 6541, 7331;
MECH 6301, 6321, 6441, 6481, 6561, 6581, 7501;
McGill University: Mech 432 (Aircraft Structures), Mech 532 (Aeroelasticity), Mech 635 (Fracture and Fatigue).

Space Engineering.
ENGR 6951, 7201; MECH 7221;

École Polytechnique: ELE6502 (Instrumentation automatisée en micro-ondes).

McGill University: Mech 542 (Spacecraft Dynamics).

3. **Aerospace Case Study.** A minimum of three credits (up to a maximum of six credits) must be obtained from the Aerospace Case Study courses. These courses, organized by CIMGAS, are conducted by experts from industry, and are given at one of the participating universities. The material given in a particular case study course might be offered only once. It is, therefore, the responsibility of the student to choose an appropriate course when it is offered. Space in some case study courses may be limited. These courses are:

MECH 6961 Aerospace Case Study I (3 credits)

MECH 6971 Aerospace Case Study II (3 credits)

ENGR 7961 Industrial Stage and Training (6 credits)
This is an integral component of the aerospace program in the Mechanical Engineering program that is to be completed under the supervision of an experienced engineer in the facilities of a participating company (Canadian work permit is required). The topic is to be decided by a mutual agreement between the student, the participating company and the program director. The course is graded on the basis of the student's performance during the work period, which includes a technical report. *Prerequisite*: Completion of at least twelve credits in the composite option and at least twenty-one credits in the aerospace program or permission of program director.

There may be some restrictions placed on students chosen for the industry sponsored "stage". For those students who are unable to obtain an industrial stage, it is possible to take ENGR 796 for a project carried out at the university. Such students must obtain the approval of the program director.

Career Prospects. In Montreal, graduates have found work in companies such as Pratt & Whitney Canada, Bell Helicopter, CAE Electronics, Bombardier, and others. They hold positions as varied as consulting engineers, aircraft designers, manufacturing plant managers, vice presidents, and chief executive officers. Some have also gone on to form their own companies, while others have taken jobs across Canada and abroad. A number of our graduates hold teaching positions in several universities across North America and in other countries.

Master of/Magisteriate in Engineering (Composites Option)

Objectives

The Master of/Magisteriate in Engineering (Mechanical Option: Composites) is offered jointly by Concordia University and École Polytechnique Montréal in collaboration with Canadian industries.

The objective of the option is to provide the student with specialized knowledge in the field of composites. A graduate from this option will possess both theoretical and practical knowledge of materials, processes and properties of composites. The student will be able to design and manufacture components and structures using composites.

Admission Requirements

Applicants must satisfy the admission requirements of the university where they register for the master's program.

Requirements for the Degree

Students must complete a minimum of 45 credits from recommended courses and an industrial "*stage*". The selection of courses must be approved by the Graduate Program Director. For course prerequisites, refer to the course descriptions.

For students registered at Concordia University, a minimum of two courses must be taken at École Polytechnique. For students registered at École Polytechnique, a minimum of two courses must be taken at Concordia University.

Note: Some graduate courses are content-equivalent with specified undergraduate courses. The students who have completed the undergraduate courses cannot register in equivalent graduate courses. Refer to the course description where these courses are marked with an (*).

Program

20-24 credits:	Composite specialization courses
10-12 credits:	Other engineering courses
5 credits:	Project
6 credits:	*Industrial "Stage"*

Core Courses

Students must take two courses from the following list. Courses listed on the same horizontal line are equivalent and a student cannot take both for credit. For example, a student cannot take both MECH 6581 at Concordia University and MEC 6309 from École Polytechnique Montréal for credit; he/she must choose one or the other.

Concordia University		**École Polytechnique Montréal**	
** MECH 6521	Manufacturing of Composites	*** MEC 6306	Design, production et application des matériaux composites
* MECH 6581	Mechanical Behaviour of Polymer Composite Materials		

MECH 6601	Testing and Evaluation of Polymer Composite Materials and Structures	MEC 6312	Contrôle de qualité et caractérisation des composites

* equivalent to MECH 422
** equivalent to MECH 425
*** equivalent to 2.541

Selected Specialized Courses

Students must take a minimum of three courses from the following list. Courses with prefix MECH - - - are offered by Concordia University. Courses with prefix MEC - - - - are offered by École Polytechnique Montréal.

Concordia University		**École Polytechnique Montréal**	
MECH 6441	Stress Analysis in Mechanical Design	MEC 6307	Mécanique des polymères
MECH 6501	Advanced Materials	MEC 6308	Fabrication des pièces plastiques par injection
MECH 6651	Structural Composites	MEC 6401	Mécanique des corps déformables
MECH 7501	Design Using Composite Materials	MEC 6414	Mécanique de la upture

Other Courses

Students must take a minimum of four other courses in the engineering curriculum. Courses can be chosen from the list of selected specialized courses, from the following list of courses, or from any other pertinent courses approved by the program director.

Concordia University		**École Polytechnique Montréal**	
MECH 6511	Mechanical Forming of Metals†	MEC 6302	Design systèmes mécaniques complexes
MECH 6531	Casting	MEC 6311	Fiabilité et Maintenabilité des systèmes mécaniques
MECH 6541	Welding and Nondestructive Testing	MEC 6404	Éléments finis... (equivalent to MECH 667)
MECH 6551	Fracture (equivalent 6414)	MEC 6405	Analyse to MEC expérimentale des contrainte
MECH 6561	High Strength Materials	MEC 6413	Matériaux métalliques caractérisation et utilisation
MECH 6571	Corrosion and Oxidation of Metals	MET 6205	Les matériaux céramiques

MECH 6671	Finite Element Method in Machine Design (equivalent to MEC 6404)		
ENGR 6211	Similarity and Modelling in Engineering Systems	CHE 6108	Systèmes polymères multiphasés

† equivalent to MECH 421

Composites Projects

A minimum of four credits must be taken from the composites project courses. The material given in a particular project course may not be repeated. It is, therefore, the responsibility of the student to choose an appropriate course when it is offered. Space in some case study courses may be limited. These courses are:

Concordia University		**École Polytechnique Montréal**	
ENGR 6991	Project and Report III (5 credits)	MEC 6901	Projet de maîtrise en ingénierie I (6 credits)

Industrial *"Stage"*

Students will be required to complete six credits in the form of an industrial work-period *("stage")* sponsored by industry. This activity is an integral part of the option and is to be carried out under the supervision of a senior engineer in the facilities of the participating company. The topic is to be decided by agreement between the student, the participating company, and the Graduate Program Director. The student's performance during this work period will be evaluated at regular intervals. The student's grade will be based on this evaluation.

The universities will make every effort to obtain the industrial *"stage"* for the student, however, in case a *"stage"* cannot be obtained, it is possible for the student to take ENGR 796 or MEC 6905 courses for a project carried out at the university or at a research institution. Such students must consult their faculty advisor and obtain the approval of the Graduate Program Director. Industrial *"stage"* courses are:

Concordia University		**École Polytechnique Montréal**	
ENGR 7961	Industrial *"Stage"* and Training (6 credits)	MEC 6905	Stage industriel I (6 credits)

General Note: Students may not take both the undergraduate and graduate equivalent courses for credit. For example, MECH 422 (or equivalent taken in other universities) and MECH 6581 cannot each be taken for credit.

2. Industrial Engineering

Master's Programs in Industrial Engineering

The Department offers two 45-credit programs leading to M.A.Sc. or M.Eng. degrees in Industrial Engineering. Applicants lacking the appropriate engineering background will be required to enroll in an extended program of specified courses. These courses are in addition to the regular 45-credit program.

Requirements for the Degree

The requirements described here are in addition to the general degree requirements for the Master's Programs in the Faculty of Engineering and Computer Science.

Master of/Magisteriate in Applied Science (Industrial Engineering) *

Students must complete 45 credits as shown below:

1. **Courses.** A minimum of four courses (16 credits) chosen from the *Engineering Courses* section, approved by the student's supervisor and either the Graduate Program Director or the Chair of the Department.

2. **Thesis**. 29 credits.

Master of/Magisteriate in Engineering (Industrial Engineering) *

Students must complete 45 credits of course-work as described below:

I. **Specialization Courses:** A minimum of nine courses (36 credits) chosen as follows:

I.1 Core Courses: The following three INDU courses (12 credits) in topic area E12 must be completed:
INDU 6111, 6211, 6311.

I.2 Area Electives: A minimum of 16 credits must be completed from the courses listed below:
INDU courses in topic area E12 excluding the core courses;
ENCS 6191;
ENGR 7011 (1 credit);
MECH 6421, 6611, 6631, 6941†.

I.3 Department Electives:
Other INDU 6000, MECH 6000† and MECH 7000† level courses.

* Subject to MELS approval.

† Students must obtain approval from the Aerospace Program Director for all the courses listed in Topic Area E11 and for the courses MECH 6091, 6231, 6241 and 7221 listed in topic area E55.

II. General Electives

Up to 9 credits may be chosen from courses listed under the Topic Area E72 or other topic areas in the *Engineering Courses* section. The student must obtain written approval from the Departments that offer these courses.

III. Project Courses

A student may take project courses (ENGR 6971, ENGR 6981, ENGR 6991), replacing courses specified in Department Electives or courses specified in General Electives.

B. Graduate Certificate Programs

Graduate Certificate in Mechanical Engineering

The Mechanical and Industrial Engineering Department offers a Graduate Certificate in Mechanical Engineering for qualified university graduates who wish to obtain expertise in the following disciplines within Mechanical Engineering:

- Aerospace
- Composite Materials
- Control and Automation
- Manufacturing Systems
- Theoretical and Computational Fluid Dynamics

The graduate certificate program can be completed in one to three years. Students with high standing in their Bachelor's program and whose academic records satisfy the requirements for Good Standing in the Master's program in Mechanical Engineering (see page 421 of the Graduate Calendar) may apply for transfer to the Master's program.

Admission Requirements. Applicants to the program must hold a Bachelor's degree in engineering with above-average standing. The Faculty Graduate Studies Committee will determine the acceptability of an applicant for admission to the program and may require the applicant to do specific remedial course work to meet the program requirements.

Requirements for Completion

1. **Credits.** A fully-qualified candidate is required to complete a minimum of 16 credits in one of the fields of concentration listed below.

2. **Courses.**
   - Minimum of 12 credits of core courses, depending on the area of concentration.
   - Maximum of 4 credits of electives, chosen from the elective courses listed or from core courses of any other areas of concentration.

3. **Good Standing.** Students who have completed at least two courses will be assessed in June of each year. To be permitted to continue, students must have a cumulative grade point average (CGPA) of at least 2.75.

4. **Graduation.** To be eligible to graduate, students must have obtained a cumulative grade point average (CGPA) of at least 2.75.

Courses

All courses are 4-credits. The core courses in the different areas of concentration are:

Aerospace

MECH 6091	Flight Control Systems
MECH 6121	Aerodynamics (*)
MECH 6161	Gas Turbine Design (*)
MECH 6171	Turbomachinery and Propulsion (*)
MECH 6231	Helicopter Flight Dynamics
MECH 6241	Operational Performance of Aircraft
ENGR 6201	Fluid Mechanics
ENGR 6421	Standards, Regulations and Certification
ENGR 6441	Materials Engineering for Aerospace
ENGR 6461	Avionic Navigation System

Composite Materials

MECH 6441	Stress Analysis in Mechanical Design
MECH 6501	Advanced Materials
MECH 6521	Manufacturing of Composites (*)
MECH 6581	Mechanical Behaviour of Polymer Composite Materials (*)
MECH 6601	Testing and Evaluation of Polymer Composite Materials and Structures

Controls and Automation

MECH 6021	Design of Industrial Control Systems (*)
MECH 6061	Analysis and Design of Hydraulic Control Systems (*)
MECH 6081	Fuel Control Systems for Combustion Engines
MECH 6091	Flight Control Systems

MECH	6621	Microprocessors and Applications (*)
ENGR	6181	Digital Control of Dynamic Systems
ENGR	6411	Robotic Manipulators I: Mechanics (*)
ENGR	6461	Avionic Navigation Systems

Theoretical and Computational Fluid Dynamics

ENGR	6201	Fluid Mechanics
ENGR	6251	The Finite Difference Method in Computational Fluid Dynamics
ENGR	6261	The Finite Element Method in Computational Fluid Dynamics
MECH	6101	Kinetic Theory of Gases
MECH	6111	Gas Dynamics (*)
MECH	6121	Aerodynamics (*)

Manufacturing Systems

INDU	6341	Advanced Concepts in Quality Improvement (*)
INDU	6351	System Reliability
MECH	6421	Metal Machining and Surface Technology
MECH	6431	Introduction to Tribology (Wear, Friction and Lubrication)
MECH	6511	Mechanical Forming of Metals (*)
ENGR	6711	Engineering Systems and Cost Analysis
ENCS	6191	Fuzzy Sets and Fuzzy Logic

Elective Courses

ENCS	6141	Probabilistic Methods in Design
INDU	6111	Theory of Operations Research
INDU	6411	Human Factors Engineering (*)
ENCS	6161	Probability and Stochastic Processes
ENCS	6181	Optimization Techniques I (*)
ENGR	6131	Linear Systems (*)
ENGR	6301	Advanced Dynamics
ENGR	6311	Vibrations in Machines and Structures
ENGR	6371	Micromechatronic Systems and Applications
ENGR	6831	Technology Assessment: Life Cycle Assessment
MECH	6051	Process Dynamics and Control (*)
MECH	6151	Process Equipment Design
MECH	6181	Heating, Air Conditioning and Ventilation (*)
MECH	6221	Advanced Turbomachinery
MECH	6301	Vibration Problems in Rotating Machinery
MECH	6311	Noise and Vibration Control
MECH	6441	Stress Analysis in Mechanical Design
MECH	6451	Computer-Aided Mechanical Design
MECH	6471	Aircraft Structures

MECH 6481	Aeroelasticity (*)
MECH 6531	Casting
MECH 6541	Joining Processes and Nondestructive Testing
MECH 6551	Fracture
MECH 6561	High Strength Materials
MECH 6591	Efficient Utilization of Materials and Energy in Manufacturing Processes
MECH 6611	Numerically Controlled Machines
MECH 6631	Industrial Automation
MECH 6641	Engineering Fracture Mechanics and Fatigue
MECH 6651	Structural Composites
MECH 6671	Finite Element Method in Machine Design
MECH 6751	Vehicle Dynamics (*)
MECH 6771	Driverless Ground Vehicles (*)

Graduate Certificate in Software Systems for Mechanical and Aerospace Engineering

Program Objectives

The Graduate Certificate in Software Systems is designed for practicing engineers who wish to enhance their abilities from their undergraduate knowledge and skills into industrial productivity commonly associated with computer-aided engineering software packages. The program covers a range of mechanical engineering software representative of industry use in the processes of: Design, Analysis, and software integration. The program consists of fifteen (15) credits, one three credit compulsory courses and four three credit courses chosen from the list given below. The potential clientele includes working engineers, as well as post-graduates who would like to enhance their skills with computer-aided engineering software packages.

Admission Requirements. Applicants to the program must hold a Bachelor's degree in engineering with above average standing. The Graduate Studies Committee of the Faculty of Engineering and Computer Science will recommend the acceptability of an applicant for admission to the program and may require an applicant to complete specific remedial course work to meet admission requirements.

Requirements for Completion

1. **Credits**. A fully qualified candidate is required to complete a minimum of fifteen (15) credits from the Mechanical Engineering Software Certificate curriculum, which should include MECH 520.

2. **Courses.** All courses are three (3) credits.

3. **Good Standing**. Students who have completed at least two courses will be assessed at the end of each term. To be permitted to continue, students must have a cumulative grade point average of at least 2.75.

4. **Graduation**. To be eligible to graduate, students must have completed at least 5 courses and obtained a cumulative grade point average of 2.75 or above. The Graduate Certificate program can be completed in one to two terms.

Elective Courses

Students are required to choose 4 of the following 5 courses:

MECH 510 Programming Tools and Methods for Mechanical and Industrial Engineers

Review of the practical aspects of software development: basics in procedural language (such as C), scripting language (such as Perl or Tcl/Tk) and object-oriented language (such as Java or C++); source manipulation, compiling with makefiles, handling libraries, debugging tools, testing, profiling and optimization, tool documentation. Phases of software development: code design, selection of algorithms and data structures, coding standards, implementation, control version systems, usability testing, documentation, bug report and code maintenance.

MECH 511 Mechanical Engineering Software in the Finite Element Method

Review of the finite element formulation for solid mechanics and heat transfer applications; modes and elements; material properties; structural geometry and loadings; selection of solutions methods; mesh refinement; post-processing and verification. Review or introduction of other special techniques such as sub-structuring, global-local analyses, condensation, mode synthesis and reduction. Illustrative examples of finite element stress, vibration, buckling and thermal analyses using ANSYS™. Open-ended and parametric design using ANSYS™. Open-ended design problems.

MECH 512 Integrated Mechanical Design using Solid Modeling Software

This course emphasizes the use of Solid Modeling software in the integrated mechanical design process. Students will gain practical knowledge with a Computer Aided Design User interface (using **CATIA™**), edition, and interrogation of Computerized Geometric and Technological data.
Part 1: Elements of computational geometry and geometric modeling for parts design. Generating and editing geometric elements. Solid and Boundary Models. Technical drawing with CATIA.
Part 2: Advanced solid modeling techniques: Boundary Representation, Solid Modeling, Sweeping, Shelling. Assembly modeling and simulation, Design detailing. Assembly drawing with CATIA, Design dimensioning, Manufacturing simulation.

MECH 513 Mechanical Design with Open Parametric Modeling Software
This course emphasizes the use of a parametric modeling software in the context of an open package. Students will gain professional practice with the leading user interface in Mechanical Engineering Computer Aided Design. Sketching and 3-D shape generation and editing using parametric and relational dependencies. Assembly design and mechanism simulation using relational dependencies. Engineering data interchange standards: IGES, STEP/PDES.

MECH 514 Mechanical Engineering Software for Simulation and Control
Review of matrix math and linear algebra, and control system modeling using a simulation system such as MATRIXx™ Fundamental of Xmath and SystemBuild.

MECH 515 Computational Fluid Methodology for Engineers
The course will present the various steps in an industrial CFD analysis process: Pre-processor (CAD+mesh generation), flow solution and mesh adaption, and post-processing (visualization), through the use of codes. After a short review of the equations of motion, the student is introduced to their discretization by: finite difference, finite volume and finite element methods. Concept of modeling approximations, explicit vs. implicit, steady vs. unsteady, artificial viscosity, accuracy, rate of convergence and physical interpretation of the results are then introduced. All steps will be illustrated through the solution of a three-dimensional flow of engineering interest. Final individual report on the process and the interpretation of the results caps the course.

Required Course

MECH 520 Mechanical and Industrial Engineering Software System Integration
Development of an engineering software system application project that integrates many packages. Combination of the use of many packages and the development of some original source code. The project should be a strategic and documented team effort following software development strategies. Documentation must all be based on electronic media tools. The release of the project material should be sufficiently organized and documented for evaluation purpose and follow-up. *Prerequisite*: 4 of the 6 listed courses: MECH 510, MECH 511, MECH 512, MECH 513, MECH 514 and MECH 515.

ENGINEERING COURSES

Courses offered in the Certificate, Master's and Ph.D. programs in Engineering are one-term four-credit courses unless otherwise specified. Not all courses are offered each year. Approximately 75 courses are offered over the summer, fall, and winter terms. In these programs, a one-term course consists of one three-hour period per week for thirteen weeks, or equivalent. The final examination in the one-term course will be written after the thirteenth week, or during an examination period specified for each term. A course given in the summer term will, in general, require two attendances per week, each for two hours, over a period of approximately six and one-half weeks. For additional information concerning course descriptions and schedules, contact the appropriate department or the Office of the Associate Dean. (See note regarding the permitted number of credits from topic areas E09 and E72 under the degree requirements section for each program). The courses are listed below, grouped under appropriate topic areas. The content of some graduate courses is equivalent to that of specified undergraduate courses. Such graduate courses, marked with (*), cannot be taken for credit by students who have completed the undergraduate equivalent. Courses marked with (**) cannot be taken for credit by students who have completed the Bachelor of/Baccalaureate in Engineering (Building) Program.

LIST OF COURSES BY TOPIC AREAS

E00 - REVIEW/MAKE-UP COURSES

Students who lack the mathematics and systems background for graduate programs in engineering may be required to take courses in this section. These courses cannot be taken for credit towards the requirements of a graduate degree.

ENCS 6001 Elements of Engineering Mathematics
ENCS 6011 Engineering Analysis I
ENCS 6101 Numerical Methods I
ENGR 6101 Physical Systems

E01 – MATHEMATICAL METHODS

ENCS 6021 Engineering Analysis II
ENCS 6031 Engineering Analysis III
ENCS 6111 Numerical Methods II
ENCS 6121 Applied Functional Analysis
ENCS 6141 Probabilistic Methods in Design
ENCS 6161 Probability and Stochastic Processes
ENCS 6181 Optimization Techniques*
ENCS 6191 Fuzzy Sets and Fuzzy Logic

E02 – DEVELOPMENTS IN ENGINEERING

Note: Subject matter will vary from term to term and from year to year. Students may re-register for these courses, providing that the course content has changed. Changes in content will be indicated by the letter following the course number, e.g., CIVI 691A, CIVI 691B, etc.

ENCS	**591**	**Topics in Engineering and Computer Science**
ENGR	**691**	**Topics in Engineering I**
ENGR	**791**	**Topics in Engineering II**
BLDG	**691**	**Topics in Building Engineering I**
BLDG	**791**	**Topics In Building Engineering II**
CIVI	**691**	**Topics in Civil Engineering I**
CIVI	**791**	**Topics In Civil Engineering II**
COEN	**691**	**Topics In Computer Engineering I**
COEN	**791**	**Topics In Computer Engineering II**
ELEC	**691**	**Topics in Electrical Engineering I**
ELEC	**791**	**Topics in Electrical Engineering II**
INDU	**691**	**Topics in Industrial Engineering**
INSE	**691**	**Topics in Information Systems Engineering**
MECH	**691**	**Topics In Mechanical Engineering I**
MECH	**791**	**Topics in Mechanical Engineering II**

E03 – SYSTEMS AND CONTROL

ELEC	**6061**	**Real-time Computer Control Systems**
ELEC	**6091**	**Discrete Event Systems**
ENGR	**6131**	**Linear Systems (*)**
ENGR	**6141**	**Nonlinear Systems**
MECH	**6681**	**Dynamics and Control of Nonholonomic Systems**
ENGR	**7181**	**Digital Control of Dynamic Systems**
ENGR	**7121**	**Analysis and Design of Linear Multivariable Systems**
ENGR	**7131**	**Adaptive Control**

E04 - FLUID MECHANICS

ENGR	**6201**	**Fluid Mechanics**
ENGR	**6211**	**Similarity and Modeling in Engineering Systems**
ENGR	**6241**	**Hydrodynamics**
ENGR	**6251**	**The Finite Difference Method in Computational Fluid Dynamics**
ENGR	**6261**	**The Finite Element Method in Computational Fluid Dynamics**
ENGR	**6271**	**Finite Volume Methods in Computational Fluid Dynamics**
ENGR	**6291**	**Rheology**

E05 - DYNAMICS AND VIBRATIONS OF MECHANICAL AND BIOMECHANICAL SYSTEMS

ENGR 6191 Introduction to Biomedical Engineering
ENGR 6301 Advanced Dynamics
ENGR 6311 Vibrations in Machines and Structures (*)
MECH 6301 Vibration Problems in Rotating Machinery
MECH 6311 Noise and Vibration Control
MECH 6321 Optimum Design of Mechanical Systems
MECH 6351 Modal Analysis of Mechanical Systems
MECH 6361 Mechanics of Biological Tissues
ENGR 7331 Random Vibrations

E06 - STRUCTURAL MECHANICS

ENGR 6501 Applied Elasticity
ENGR 6511 Matrix Analysis of Structures (*)
ENGR 6531 The Finite Element Method in Structural Mechanics
ENGR 6541 Structural Dynamics
ENGR 6551 Theory of Elastic and Inelastic Stability
ENGR 6561 Theory of Plates and Shells
ENGR 6571 Energy Methods in Structural Mechanics
ENGR 6581 Introduction to Structural Dynamics (*)
ENGR 7521 Advanced Matrix Analysis of Structures
ENGR 7531 Boundary Element Method in Applied Mechanics

E07 - ENERGY CONVERSION

BLDG 6951 Passive Solar Building Design
ENGR 6601 Principles of Solar Engineering
ENGR 6611 Equipment Design for Solar Energy Conversion
ENGR 6661 Solar Energy Materials Science
ENGR 6811 Energy Resources: Conventional and Renewable

E10 - ROBOTICS

ENGR 6411 Robotic Manipulators I: Mechanics*
ENGR 7401 Robotic Manipulators II: Control

E11 - AEROSPACE

ENGR 6421 Standards, Regulations and Certification
ENGR 6441 Materials Engineering for Aerospace
ENGR 6461 Avionic Navigation Systems
ENGR 6951 Seminar on Space Studies
MECH 6941 Concurrent Engineering in Aerospace Systems

MECH 6961 Aerospace Case Study I
MECH 6971 Aerospace Case Study II
ENGR 7201 Micro-gravity Fluid Dynamics
ENGR 7461 Avionic Systems Design
ENGR 7961 Industrial *"Stage"* and Training

E12 – INDUSTRIAL ENGINEERING

INDU 6111 Theory of Operations Research
INDU 6121 Advanced Operations Research*
INDU 6131 Graph Theory with System Applications
INDU 6211 Production systems and Inventory Control
INDU 6231 Scheduling Theory
INDU 6311 Discreet System Simulation
INDU 6331 Advanced Quality Control
INDU 6341 Advanced Concepts in Quality Improvement*
INDU 6351 System Reliability
INDU 6411 Human Factors Engineering*
INDU 6421 Occupational Safety Engineering*

E21 - INTEGRATIVE STUDIES FOR BUILDING ENGINEERING

BLDG 6111 Computer-Aided Building Operation
BLDG 6151 Database Applications in Building and Civil Engineering
BLDG 6221 Design of Computer Aided Systems in Building and Civil Engineering
BLDG 6231 Applications of Artificial Intelligence in Building and Civil Engineering
BLDG 6541 Heat Transfer (**)
BLDG 6561 Building Economics I (**)
BLDG 6571 Project Management
BLDG 6581 Decision Analysis
BLDG 6591 Computer-Aided Building Design (*)
BLDG 6631 Fundamentals of Facility Management
BLDG 6861 Simulations and Design of Construction Operations
BLDG 7511 Integrated Building Design

E22 - BUILDING SCIENCE

BLDG 6601 Building Enclosure (*)
BLDG 6611 Building Science (**)
BLDG 6621 Modern Building Materials (*)
BLDG 6641 Industrialized Building
BLDG 6651 Fire and Smoke Control in Buildings (*)

BLDG 6661 Hydrothermal Performance of the Building Envelope
BLDG 6671 Diagnostics and Rehabilitation of Building Envelope
BLDG 7601 Durability of Building Materials

E23 - BUILDING ENVIRONMENT

BLDG 6701 Building Environment
BLDG 6711 Mechanical Systems in Building
BLDG 6721 Building Acoustics (*)
BLDG 6731 Building Illumination (*)
BLDG 6741 HVAC Control Systems
BLDG 6751 Indoor Air Quality and Ventilation (*)
BLDG 6761 Intelligent Buildings
BLDG 6781 Energy Management in Buildings
BLDG 6791 Thermal Building Simulation
BLDG 7401 Dispersion of Building Exhaust

E24 - CONSTRUCTION MANAGEMENT

BLDG 6801 Construction Planning and Control
BLDG 6811 Labour and Industrial Relations in Construction (*)
BLDG 6821 Legal issues in Construction (*)
BLDG 6831 Construction Processes (*)
BLDG 6851 Project Cost Estimating
BLDG 6921 Trenchless Technology for Rehabilitation Works
BLDG 7811 Project Acquisition and Control
BLDG 7831 Building Economics II
BLDG 7841 Information Technology Applications in Construction
BLDG 7861 Business Practices in Construction
BLDG 7871 Construction Equipment Management

E31 - STRUCTURAL ENGINEERING

BLDG 6061 Structural Systems for Buildings
BLDG 6071 Wind Engineering and Building Aerodynamics
BLDG 6931 Infrastructure Rehabilitation
CIVI 6001 Advanced Reinforced Concrete
CIVI 6011 Pre-cast and Pre-stressed Concrete Structures
CIVI 6051 Design of Industrial Structures
CIVI 7001 Earthquake Engineering
CIVI 7031 Dynamics of Foundations

E32 - BRIDGE ENGINEERING

CIVI 6101 Planning and Design of Bridges
CIVI 7101 Theory and Design of Orthotropic Bridges

CIVI 7111 Theory and Design of Modern Bridge Systems
CIVI 7121 Cable Stayed Bridges

E33 - WATER RESOURCES

CIVI 6301 Hydrology (*)
CIVI 6331 Hydraulic Engineering
CIVI 6381 Hydraulic Structures
CIVI 7311 Groundwater Flow

E34 - URBAN TRANSPORTATION

CIV1 6401 Transportation Systems Analysis
CIVI 6411 Urban Transportation Planning (*)
CIV1 6441 Traffic Engineering (*)
CIV1 6451 Pavement Design
CIVI 7401 Design of Transportation Terminals

E35 - GEOTECHNICAL ENGINEERING

CIVI 6501 Foundation Engineering
CIV1 6511 Earth Structures and Slope Stability
CIV1 6521 Soil Behaviour
CIV1 6531 Soil Testing and Properties
CIV1 6541 Reinforced Earth

E36 - INDUSTRIAL WASTE MANAGEMENT

CIVI 6481 Hazardous Waste Management
CIVI 6491 Engineering Aspects of Site Remediation
CIVI 6631 Transportation of Hazardous Materials and Wastes
CIVI 6661 Environmental Impact Assessment
CIVI 6671 Fate and Transport of Contaminants in the Environment

E37 - ENVIRONMENTAL ENGINEERING

CIVI 6601 Modeling Aspects of Environmental Systems
CIVI 6611 Environmental Engineering
CIVI 6621 Engineering Aspects of Biological Treatment for Air and Water
CIVI 6641 Unit Operations in Environmental Engineering
CIVI 6651 Water Pollution and Control
CIVI 6901 Selected Topics in Civil Engineering I

E42 - COMMUNICATIONS

ELEC 6111 Detection and Estimation Theory
ELEC 6121 Spread Spectrum Communications

ELEC 6131 Error Detecting and Correcting Codes
ELEC 6141 Advanced Digital Wireless Transmission
ELEC 6151 Information Theory and Source Coding
ELEC 6161 Stochastic Processes for Communications and Signal Processing
ELEC 6171 Modeling and Analysis of Telecommunications Networks
ELEC 6181 Real-time and Multimedia Communication over Internet
ELEC 6831 Digital Communications I
ELEC 6841 Digital Communications II
ELEC 6851 Introduction to Telecommunications Networks
ELEC 6861 Higher Layer Telecommunications Protocols
ELEC 6871 Fiber-Optics Communication Systems and Networks
ELEC 6881 Fundamentals and Applications of MIMO Communications
ELEC 7151 Broadband Communications Networks
ENCS 6811 Optical Networking: Architectures and Protocols

E43 – MICRO-DEVICES AND FABRICATION PROCESSES

ELEC 6221 Solid State Devices*
ELEC 6231 Design of Integrated Circuit Components*
ELEC 6241 VLSI Process Technology*
ELEC 6251 Microtransducer Process Technology
ELEC 6261 Optical Devices for High-Speed Communications
ELEC 6271 Nanoscience and Nanotechnology: Opto-Electronic Devices

E44 – FIELDS, WAVES AND OPTOELECTRONICS

ELEC 6301 Advanced Electromagnetics
ELEC 6341 Antennas (*)
ELEC 6351 Modern Antenna Theory
ELEC 6361 Acoustics (*)
ELEC 6371 Design of Wireless RF Systems
ELEC 6381 Techniques in Electromagnetic Compatibility
ELEC 6391 Microwave Engineering (*)

E45 – ELECTRICAL POWER ENGINEERING

ELEC 6411 Power Electronics I*
ELEC 6461 Power Electronics II
ELEC 6481 Computer-aided Analysis of Power Electronic Systems
ELEC 6491 Controlled Electric Drives
ELEC 7441 Design of Power Electronic Circuits
ELEC 7451 Power System Compensation

E47 – SIGNAL PROCESSING

ELEC 6601 Digital Signal Processing
ELEC 6611 Digital Filters

ELEC 6621 Digital Waveform Compression
ELEC 6631 Digital Video Processing
ELEC 7601 Adaptive Signal Processing
ELEC 7631 Multi-dimensional Signal and Image Processing

E48 – COMPUTER ENGINEERING

COEN 5301 Object Oriented Programming
COEN 5311 Data Structures and Algorithms
COEN 5601 Introduction to Real-time Systems
COEN 6311 Software Engineering
COEN 6321 Applied Genetic and Evolutionary Systems
COEN 6331 Neural Networks
COEN 6611 Real-time Systems
COEN 6711 Microprocessors and Their Applications
COEN 6721 Fault-Tolerant Distributed Systems
COEN 6741 Computer Architecture and Design
COEN 7311 Protocol Design and Validation
COEN 7741 Advanced Computer Architecture

E51 - INDUSTRIAL CONTROL AND AUTOMATION

MECH 6011 Analysis and Design of Pneumatic Systems
MECH 6021 Design of Industrial Control Systems (*)
MECH 6041 Virtual Systems Engineering
MECH 6051 Process Dynamics and Control (*)
MECH 6061 Analysis and Design of Hydraulic Control Systems (*)
MECH 6071 Switched and Hybrid Control Systems
MECH 6081 Fuel Control Systems for Combustion Engines
MECH 6621 Microprocessors and Applications (*)
MECH 6631 Industrial Automation
MECH 7011 Dynamics of Hydraulics Control Systems

E52 - THERMODYNAMICS AND HEAT TRANSFER

MECH 6101 Kinetic Theory of Gases
MECH 6131 Conduction and Radiation Heat Transfer
MECH 6141 Heat Exchanger Design
MECH 6151 Process Equipment Design
MECH 6181 Heating, Air Conditioning and Ventilation (*)
MECH 6191 Combustion
MECH 7101 Convection Heat Transfer

E53 - MACHINE DESIGN AND PRODUCTION

ENGR 6161 Sensors and Actuators
ENGR 6371 Micromechatronic Systems and Applications

MECH 6411 Theory and Design of Machine Tools
MECH 6421 Metal Machining and Surface Technology
MECH 6431 Introduction to Tribology (Wear, Friction and Lubrication)
MECH 6441 Stress Analysis in Mechanical Design
MECH 6451 Computer-Aided Mechanical Design
MECH 6481 Aeroelasticity
MECH 6641 Engineering Fracture Mechanics and Fatigue
MECH 6671 Finite Element Method in Machine Design
MECH 7411 Mechanisms and Linkage Design

E54 - MATERIALS ENGINEERING AND PROCESSING

MECH 6511 Mechanical Forming of Metals (*)
MECH 6531 Casting
MECH 6541 Joining Processes and Nondestructive Testing
MECH 6551 Fracture
MECH 6561 High Strength Materials
MECH 6571 Corrosion and Oxidation of Metals
MECH 6591 Efficient Utilization of Materials and Energy in Manufacturing Processes

E55 - AERONAUTICS

MECH 6091 Flight Control Systems
MECH 6111 Gas Dynamics (*)
MECH 6121 Aerodynamics (*)
MECH 6161 Gas Turbine Design (*)
MECH 6171 Turbomachinery and Propulsion (*)
MECH 6221 Advanced Turbomachinery
MECH 6231 Helicopter Flight Dynamics
MECH 6241 Operational Performance of Aircraft
MECH 6261 Mathematical Methods of Aerothermodynamics
MECH 7221 Space Flight Mechanics and Propulsion Systems
MECH 7231 Aerothermodynamics of Viscous Fluid Flows

E56 - GROUND VEHICLE DYNAMICS

MECH 6751 Vehicle Dynamics (*)
MECH 6761 Vehicular Internal Combustion Engines (*)
MECH 6771 Driverless Ground Vehicles (*)
MECH 6781 Guided Vehicle Systems (*)
MECH 7511 Vehicle Vibration and Control
MECH 7711 Handling and Stability of Road Vehicles

E57 - COMPOSITE MATERIALS

MECH 6501 Advanced Materials
MECH 6521 Manufacturing of Composites
MECH 6581 Mechanical Behaviour of Polymer Composite Materials

MECH 6601 Testing and Evaluation of Polymer Composite Materials and Structures
MECH 6651 Structural Composites
MECH 7501 Design Using Composite Materials

E61 - DOCTORAL/Ph.D. SEMINAR

BLDG 8011 Doctoral Seminar in Building Engineering (***)
CIVI 8011 Doctoral Seminar in Civil Engineering (***)
ELEC 8011 Doctoral Seminar in Electrical Engineering (***)
MECH 8011 Doctoral Seminar in Mechanical Engineering (***)
ENCS 8011 Ph.D. Seminar (****)

(*) Cross-listed courses.
(***) Available only to students admitted prior to September 1997.
(****) Students admitted prior to September 1997 are not allowed to substitute ENCS 801 for an equivalent course work.

E62 - THESIS AND COMPREHENSIVE EXAMINATION

ENCS 8501 Comprehensive Examination
ENCS 8511 Doctoral Research Proposal
ENGR 8901 Master of Applied Science Research and Thesis (29 credits)
ENGR 8911 Doctoral Research and Thesis
INSE 8901 Master of Applied Science Research and Thesis (25 credits)

E63 - PROJECT AND REPORT

ELEC 6961 Graduate Seminar in Electrical and Computer Engineering
ENGR 6971 Project and Report I
ENGR 6981 Project and Report II
ENGR 6991 Project and Report III

E67 – 3D GRAPHICS AND INTELLIGENT SYSTEMS

INSE 6510 Video Game Technology and Development
INSE 6530 3D Graphics and Computer Animation for Game Design

E68 - QUALITY SYSTEMS ENGINEERING

INSE 6210 Total Quality Methodologies in Engineering
INSE 6220 Advanced Statistical Approaches to Quality
INSE 6230 Total Quality Management Project
INSE 6240 Executive Communication
INSE 6250 Quality Methodologies for Software
INSE 6260 Software Quality Assurance
INSE 6270 Quality-Based Systems Engineering
INSE 6280 Quality Assurance for Systems Engineering
INSE 6290 Quality in Logistics and Supply Chain Management
INSE 6300 Quality Assurance in Supply Chain Management

E69 - INFORMATION SYSTEMS SECURITY

INSE 6110 Foundation of Cryptography
INSE 6120 Crypto-Protocol and Network Security
INSE 6130 Operating Systems Security
INSE 6140 Middleware and Application Security
INSE 6150 Security Evaluation Methodologies

E70 - INFORMATION SYSTEMS ENGINEERING

INSE 6100 Advanced Java Platforms
INSE 7100 Design and Analysis of Security Protocols
INSE 7110 Value Added Service Engineering in Next Generation Networks
INSE 7120 Advanced Network Management
INSE 6311 Sustainable Infrastructure Planning and Management Systems
INSE 6411 Product Design Theory and Methodology

E71 - COMPUTER SCIENCE PROGRAM

COMP 6731 Pattern Recognition
COMP 6741 Introduction to Expert Systems
COMP 7231 Distributed Computer systems
COMP 7421 Operating System Design
COMP 7651 Advanced Analysis of Algorithms
COMP 7711 Artificial Intelligence

E72 - BUSINESS ADMINISTRATION PROGRAM

MBA 607 Financial Accounting for Managerial Decisions
MBA 608 Managerial Statistics
MBA 614 Financial Management
MBA 616 Operations Management
MBA 628 Management Accounting

F03 – APPLICATION SPECIFIC INTEGRATED

COEN 6501 Digital System Design and Synthesis
COEN 6511 VLSI Circuit Design
COEN 6521 Design for Testability
COEN 6531 ASIC Synthesis
COEN 7501 Formal Hardware Verification
ELEC 6051 Introduction to Analog VLSI
ELEC 6071 Analog VLSI techniques for Signal Processing
ELEC 6081 Modern Analog Filter Design

Course Descriptions - Building Engineering

BCEE 6961 Graduate Seminar in Building and Civil Engineering (1 credit)
M. Eng. students must attend a set of seminars identified by the Department and submit a comprehensive report on selected topics. The report, including an abstract, must be suitably documented and illustrated, should be at least 1000 words in length, must be typewritten on one side of 21.5 cm by 28 cm white paper of quality, and must be enclosed in binding. Students are referred to *Form and Style: Thesis, Reports, Term Papers, fourth edition by Campbell and Ballou,* published by Houghton Mifflin.
Note: This course cannot be taken by M.A.Sc. or Ph.D. students.

BLDG 6061 Structural Systems for Buildings (4 credits)
Building components and assembled systems. Structural efficiency and economy: rigid frames, shear walls, framed tube, latticed structures; membrane, air and cable supported structures. Selection and preliminary design of building structural systems, materials and components. Case studies.

BLDG 6071 Wind Engineering and Building Aerodynamics (4 credits)
Atmospheric circulations; atmospheric boundary layer; wind structure; wind speed and turbulence measurements; bluff body aerodynamics; mean and fluctuating wind forces on buildings; internal wind pressures; along-wind, across-wind and torsional building response to wind; snow drifting and accumulation problems; dispersion of gaseous pollutants. A case study or a project.

BLDG 6111 Computer-Aided Building Operation (4 credits)
Computer systems for energy management, including scheduling and operation of HVAC systems and lighting. Applications for intelligent buildings. Use of simulation and knowledge-based software for automatic regulation of building operation. Diagnosis of malfunctions and modifications of operations. Computerized building security systems. Actions during extraordinary conditions such as fire emergencies. A project. *Prerequisite*: BLDG 6711.

BLDG 6151 Database Applications in Building and Civil Engineering (4 credits)

Components, properties and limits of databases and database management systems (DBMS). Database requirements for engineering tasks. Design of database schema and implementation in commercially available DBMS. Engineering data modeling techniques. Topics include: the entity/relationship model; the relational data model; the standard database language SQL; and the object-oriented data model. A project.

Note: Students who have taken ENGR 6151 may not take this course for credit.

BLDG 6221 Design of Computer-Aided Systems in Building and Civil Engineering (4 credits)

Object-oriented modeling of physical components, design objectives, performance requirements and engineering processes. Identification of objects and definition of their arrangement and interaction to model engineering processes. Overview of the life-cycle of an engineering software project. Project on implementation of a small scale computer-aided engineering system.

Note: Students who have taken ENGR 6221 may not take this course for credit.

BLDG 6231 Applications of Artificial Intelligence in Building and Civil Engineering (4 credits)

Introduction to artificial intelligence techniques in an engineering context; heuristic search methods, logical reasoning, knowledge-based systems, neural networks, genetics algorithms, and case-based reasoning. Algorithmic versus knowledge-based programming for engineering applications. Emphasis on knowledge-based systems and their characteristics, capabilities and limitations. Case studies in design, failure diagnosis and processing of standards. A project.

Note: Students who have taken ENGR 6231 may not take this course for credit.

BLDG 6541 Heat Transfer (4 credits)

(Cannot be taken for credit by students who have completed the Bachelor of/ Baccalaureate in Engineering (Building) Program).

Steady state heat conduction. Convection and radiation heat exchange. Refrigeration cycles. Theory of air vapour mixtures. Introduction to heat transfer in building environment. Unsteady state of heat transfer. Case studies.

BLDG 6561 Building Economics I (4 credits)

(Cannot be taken for credit by students who have completed the Bachelor of/ Baccalaureate in Engineering (Building) Program).

Development of economic performance measures of interest to developers, owners, contractors and users. Sources of finance and the determinants of the cost of money. Elementary estimating; cost indices; forecasting techniques; value of money; economic comparison techniques; evaluation of projects in private and public sectors; tax regulations; inflation; life-cycle costing; risk analysis; non-

economic attributes. Case studies of economic analysis of projects, single building and building components. A project.

BLDG 6571 Project Management (4 credits)
Introduction to managing the development, design and construction of buildings. Examination of project management for the total development process, including inter- relationships between owners, developers, financing sources, designers, contractors and users; methods of project delivery; introduction to planning and scheduling; role and tasks of the project manager; feasibility analyses; construction claims; financing and cash-flow analysis; government regulations; environmental and social constraints; introduction to control of cost, time and technical performance; human factors; computer applications. A project.

BLDG 6581 Decision Analysis (4 credits)
Development of a basic theory of decision making under uncertainty. Rationales of decision makers, utility, the concept of the value of perfect information. The Bayesian approach to decision making; pre-posterior analysis and optimal fixed-sized analysis for random processes. Decision analysis with multiple objective, structuring the problem, multi-attributed utility functions, case studies. A project.

BLDG 6591 Computer-Aided Building Design (*) (4 credits)
Identification of objectives, decision variables, processes and information flow in building design. Application and evaluation of computer systems to components of the building design process. Determination of decision variables in problem modelling and sensitivity of results. Current applications in structural analysis and design, space layout, electrical distribution systems, HVAC design, lighting design, estimating, specification editing and scheduling. Evaluation of issues of interdisciplinary information control and interchange. A project. *Prerequisites*: BLDG 6561.

BLDG 6601 Building Enclosure (4 credits)
(Cannot be taken for credit by students who have completed the undergraduate equivalent).
Schematic and detail design of walls, windows and roofs. Complex building types will be examined to show the relationships between massing, materials, energy conservation and building use. Solar shading, daylighting, rainscreen and air barrier principles will be emphasized. A project. *Prerequisite*: BLDG 6611.

BLDG 6611 Building Science (4 credits)
(Cannot be taken for credit by students who have completed the Bachelor of/ Baccalaureate in Engineering (Building) Program).
Environmental exterior and interior influences on inner environmental control. Topics include: thermal energy exchanges, psychrometrics, vapour and fluid

flow, air leakage, ventilation and design comfort conditions, selection of materials and building systems. A case study or a project.

BLDG 6621 Modern Building Materials (4 credits)
(Cannot be taken for credit by students who have completed the undergraduate equivalent).
Structural, thermal and acoustical properties of new building materials such as: plastics, synthetic fibres, adhesives, sealants, caulking compounds, forams, sandwich panels, composites, polymer-concrete systems, fibre-reinforced concretes, plastic mortars, polymers for flooring, roofing, synthetic wall papers. Consideration of corrosion, bio- and thermal degradation, stability under ultraviolet and solar radiation. A project. *Prerequisite:* BLDG 6611 previously or concurrently.

BLDG 6631 Fundamentals of Facility Management (4 credits)
Systems approach to planning, organization and implementation of a facility, including space allocation, leasing and marketing, operation, maintenance, and renovation over the life of the building. Forecast of budget requirements for effective operation, maintenance, and renovation. Correlation between the operation of the building and health risks, comfort, productivity, and costs. Integrated approach to the planning, analysis, evaluation, organization and optimization of physical systems of facilities. Case studies.

BLDG 6641 Industrialized Building (4 credits)
Trends toward off-site fabrication of buildings. Needs and technical requirements of international markets. Principal types of industrialized systems, materials and components. Optimization of industrialized production. Planning, design, construction and maintenance. Codes and standards. A case study and project.

BLDG 6651 Fire and Smoke Control in Buildings (4 credits)
(Cannot be taken for credit by students who have completed the undergraduate equivalent).
Topics treated include: fire and smoke control; failure mechanisms of building enclosure, illustrated by case studies; performance codes for enclosure systems; enclosure design for extreme operation environments. A project. *Prerequisite:* BLDG 6611.

BLDG 6661 Hygrothermal Performance of the Building Envelope (4 credits)
Modelling of dynamic building envelope thermal performance. Thermal bridges. Modeling of transient moisture transfer, condensation and accumulation. Advanced glazings and evaluation of window performance. Active building envelope components for heat and moisture control. Experimental techniques for performance evaluation of the building envelope; infrared thermography, guarded hot box and calibrated hot box tests. A project. *Prerequisite*: BLDG 6611 previously or concurrently.

BLDG 6671 Diagnostics and Rehabilitation of Building Envelope (4 credits)
Failures in building envelopes. Modes of deterioration including freeze-thaw, chemical, movements. Diagnostics and investigation techniques including field survey instruments. Assessment of intervention magnitude and performance of proposed solutions. Codes, standards and regulations. Case studies.

BLDG 6701 Building Environment (4 credits)
Design criteria of indoor environment. Assessment of thermal comfort and sensation. Mathematical models of thermal comfort: predictive models and adaptive models. Prediction of thermal sensation using: computer simulation, and measurements with thermal comfort meter. Verification of compliance with standards. Visual comfort. Standards for quality of visual environment. Calculation of photometric parameters. Preliminary design of the indoor lighting system. Evaluation of illuminance level using commercially available software packages. Acoustical comfort. Standards for quality of acoustical environment. Sound control measures through the design of buildings and HVAC systems. Two projects.

BLDG 6711 Mechanical Systems in Building (4 credits)
HVAC Systems. Analysis, selection and operation; design of air and water distribution systems in buildings; waste water disposal and sprinkler systems. A project. *Co-requisite*: BLDG 6701.

BLDG 6721 Building Acoustics (4 credits)
(Cannot be taken for credit by students who have completed the undergraduate equivalent).
An understanding of sound and an examination of the major factors which contribute to a controlled acoustic environment in buildings. Topics covered include: basic vibration, sources, measurement and description of environmental noise, psychological and physiological aspects of sound perception; sound transmission through building elements; reverberation, measurement and control; and room acoustics. Case studies and a project.

BLDG 6731 Building Illumination (*) (4 credits)
Quantitative and qualitative aspects of illumination systems. Photometric quantities, visual perception and colour theory, standards, daylight and artificial illumination systems, radiative transfer. Fixture and lamp characteristics, control devices for improved energy efficiency. Design of advanced fenestration systems for daylighting. Field measurements and artificial sky tests. Virtual reality and other computer simulation techniques for lighting. A project.

BLDG 6741 HVAC Control Systems (4 credits)
HVAC control loops: classification and structure, specifications, hardware, tuning and testing. Optimization of single- and multi-loop control systems.

Energy management systems for monitoring, control and diagnostics of HVAC system operation. A project.

BLDG 6751 Indoor Air Quality and Ventilation (*) (4 credits)
History and development of indoor air science. Relevant national and provincial standards and regulations. Principles of occupational hygiene; identification, evaluation and control of physical, biological, and chemical agents in indoor environment. Ventilation requirements. Definition of ventilation efficiency and removal effectiveness; measurement techniques and modelling. Indoor air monitoring; field studies of gases, fumes, solvents, and dusts. Plan for building walkthrough evaluations; strategies for improving indoor air quality. Building design for acceptable indoor air quality, material selection and specification. A case study or project.

BLDG 6761 Intelligent Buildings (4 credits)
Issues related to the Intelligent Building; automation, communication and security. Mechanical, electrical, electronic subsystems and their integration within the building; configuration and operational characteristics; performance specifications; analytical models; design methods; case studies. A project.

BLDG 6781 Energy Management in Buildings (4 credits)
Energy-related standards, codes and by-laws. Methods of assessment of the actual energy performance. Conventional and innovative measurement and analysis techniques. Energy-oriented renovation or replacement of building sub-systems (e.g. HVAC and lighting systems). Prediction of energy and cost savings using commercially available software packages. Verification of compliance with standards. Life cycle analysis. A case study and project. *Prerequisite*: BLDG 6611 previously or concurrently.

BLDG 6791 Thermal Building Simulation (4 credits)
Mathematical models of heat and mass transfer phenomena through building components: transfer function methods and numerical methods. Models of radiative and convective heat transfer phenomena within buildings. Application to equipment-based modelling of HVAC systems: first principle models and correlation-based models. System-based modelling of HVAC systems. Validation of computer models. A project. *Prerequisite*: BLDG 6611.

BLDG 6801 Construction Planning and Control (4 credits)
Methods of delivering construction. Contractual relationships and organizational structures. Phases of project development. Estimating resource requirements; costs and durations. Bidding strategies. Network analysis using CPM and PERT, time-cost trade-off, resource allocation. Cash flow analysis. Earned-value concept for integrated time and cost control. Quality control. Value engineering. A case study and project. *Prerequisite*: BLDG 6571.

BLDG 6811 Labour and Industrial Relations in Construction (4 credits)
(Cannot be taken for credit by students who have completed the undergraduate equivalent).
The study of labour legislation with special emphasis on the construction industry, union organization, the theory and practice of negotiations, mediation, contract administration and arbitration. Review of actual contracts, discussion of future trends. Case studies.

BLDG 6821 Legal Issues in Construction (4 credits)
(Cannot be taken for credit by students who have completed the undergraduate equivalent).
Legal concepts and processes applicable to the development of constructed facilities and to the operation of the construction firm. Emphasis on Quebec law and institutions. Case studies.

BLDG 6831 Construction Processes (4 credits)
(Cannot be taken for credit by students who have completed the undergraduate equivalent).
A study of current construction methods and techniques. The subjects include wood framing, masonry, concrete forming, slipforming, precast construction, industrialized building, deep excavation shoring and underpinning. The methods are described in terms of materials involved, equipment required, current field practice and safety considerations. Case studies.

BLDG 6851 Project Cost Estimating (4 credits)
Techniques and procedures used for estimating cost of construction projects. Topics include: cost estimation process; elements of project cost; conceptual and detailed cost estimation methods; risk assessment and range estimating; case studies; computer-aided estimating. A project.

BLDG 6861 Simulations and Design of Construction Operations (4 credits)
Principles of modelling and simulation. Classification and validation of simulation models. Analysis of input data and outputs. Object Oriented Simulation (OOS). Simulation languages. Application of discrete event simulation in construction operations including earthmoving operations, building construction operations, and tunneling operations. A project.
Prerequisite: BLDG 6831.

BLDG 691 Topics in Building Engineering I (4 credits)
Note: Subject matter will vary from term to term and from year to year. Students may re - register for these courses, providing that the course content has changed. Changes in content will be indicated by the letter preceding the course number, e.g. CIVI A691, CIVI B691, etc.

BLDG 6921 Trenchless Technology for Rehabilitation Works (4 credits)
State of Canadian urban infrastructure with a focus on underground facilities; current industry practice; common types of defects in underground pipes; diagnostics of defects and evaluation techniques for the conditions of water and sewer mains; planning, equipment, materials and methods for rehabilitation of water and sewer mains; case studies.
Note: Students who have taken ENGR 6721 may not take this course for credit.

BLDG 6931 Infrastructure Rehabilitation (4 credits)
State of Canadian urban infrastructure. Rehabilitation techniques as applicable to steel and concrete structures; degradation mechanisms; detection and classification of defects. Evaluation and assessment of the conditions of buildings and bridges. Rehabilitation materials and methods. Codes and guidelines. Case studies.
Note: Students who have taken ENGR 6731 may not take this course for credit.

BLDG 6951 Passive Solar Building Design (4 credits)
Design principles of solar buildings, including direct gain, indirect gain and solaria. Analytical and computer models of passive systems. Performance of glazing systems, transparent insulation, and airflow windows. Building-integrated photovoltaic systems. Thermal storage sizing for solar energy storage; phase-change thermal storage. Thermosyphon collectors. Prevention of overheating, shading systems and natural ventilation. *Prerequisite:* BLDG 6611.
Note: Students who have taken ENGR 6651 may not take this course for credit.

BLDG 7401 Dispersion of Building Exhaust (4 credits)
Atmospheric parameters, wind velocity profiles, meteorological data. Gaussian dispersion equations. Plume rise and trajectories. Evaluation of stack gas plume dispersion. Trapped plumes; Turner's approximation. Potential reingestion of building exhaust. Analytical, numerical and experimental modelling of dispersion process; design guidelines fumigation. A case study or a project. *Prerequisite*: BLDG 6611.

BLDG 7511 Integrated Building Design (4 credits)
Compatibility among building subsystems (structural, envelope, mechanical, lighting, materials) and between the building and the environment. Integration issues in the design, production and operation of the built facility. Case studies of failures caused by lack of compatibility. Consideration for tolerances and sustainable development. A project. *Prerequisites*: BLDG 6601 and BLDG 6711.

BLDG 7521 Advanced Computer-Aided Building Design (4 credits)
Characteristics of the building design process. Traditional versus emerging roles of computers pertaining to building design activities. Preliminary design and integrated design issues: analysis with incomplete/imprecise data, automatic sizing and checking based on Standards, interfaces between CAD and

analysis routines, communications across disciplines and through design stages, standardization. Applications involving operations research techniques, KBS and analysis packages for engineering performance evaluation. *Prerequisite:* BLDG 6101.

BLDG 7601 Durability of Building Materials (4 credits)
Concepts underlying long-term performance of building materials such as: ceramics, stucco and synthetic stucco, lightweight concrete, wood and wood-based products, thermal insulation, selected composite materials, sealants, membranes used for waterproofing and air barriers. Methods of fabrication, properties and evaluation for durability. Failure mechanisms under combined actions of mechanical and environmental loads (temperature, moisture, freeze-thaw, solar radiation, salt solutions, air pollution, and microorganisms). A case study and project. *Prerequisite*: BLDG 6611 or equivalent.

BLDG 7811 Project Acquisition and Control (4 credits)
Study of techniques and procedures used for construction project procurement and control. Topics treated include: marketing, bidding strategies, work break-down structure and contract packages, techniques for integrated time and cost control; management information systems for control, procurement; productivity measurement, contingency and escalation analysis and control. A project.
Prerequisite: BLDG 6571, 6801.

BLDG 7831 Building Economics II (4 credits)
Topics include: replacement analysis; risk analysis of projects; sensitivity analysis; forecasting techniques, profitability analysis; multi-attributed decision analysis, case studies. A project. Prerequisite: BLDG 6561, 6581.

BLDG 7841 Information Technology Applications in Construction (4 credits)
Use of computers in estimating, cost engineering, scheduling and resource analyses, materials control, report generation and operations simulation. Information systems: information-based theories of management; information technology, cost and value information; analysis, design and implementation of a network based control system. Considerations for computer usage in construction firms; hardware, software, operations, economic, human and organizational. Product and process modelling; Internet use in product delivery. A project. *Prerequisite*: BLDG 7811.

BLDG 7861 Business Practices in Construction (4 credits)
A study of business practices as they relate to the construction industry. Topics treated include: organization; marketing; bid preparation; bonding; personnel management; financing; accounting; cash-flow analysis; capital budgeting. The principles are first presented and then followed by case studies. A project.
Prerequisite: BLDG 6801.

BLDG 7871 Construction Equipment Management (4 credits)
The study of various classes of equipment, (cranes, excavators, loaders, tractors, etc.) used in construction. Methods are developed for selecting, acquiring, maintaining and replacing equipment. Treatment of simulation and its use for the optimal selection of equipment spreads. A project. *Prerequisite:* BLDG 6561.

BLDG 791 Topics in Building Engineering II (4 credits)
Note: Subject matter will vary from term to term and from year to year. Students may re - register for these courses, providing that the course content has changed. Changes in content will be indicated by the letter following the course number, e.g. CIVI 691A, CIVI 691B, etc.

BLDG 8011 Doctoral Seminar in Building Engineering
Grading on a pass/fail basis only. No credit value.

Course Descriptions - Civil Engineering

CIVI 6001 Advanced Reinforced Concrete (4 credits)
Strength limits; modes of failure; flexural and inclined cracking strength; crack propagation; crack width; deformation; biaxial and multiaxial strength of concrete; ultimate strength in flexure; ultimate strength in diagonal splitting; ultimate strength of columns; current research progress and modelling for finite element analysis; new code regulations. A project.

CIVI 6011 Precast and Prestressed Concrete Structures (4 credits)
Prefabrication and prestressing concepts; segmental and modular structures and connections; composite and pre-and post-tensioned structures; analysis and design of determinate and indeterminate systems; design codes. A project.

CIVI 6051 Design of Industrial Structures (4 credits)
Problems in the design of industrial structures in steel, reinforced concrete, masonry, and timber; rejuvenation and expansion of existing plant facilities; design of bracing systems, foundations, silos and liquid storage tanks; connections, standard details and codes. A case study and project.

CIVI 6101 Planning and Design of Bridges (4 credits)
History and development of bridges; basic parameters; material, system and geometry; selection of location and optimum proportioning of different structural types; selection and design of steel and concrete highway and railway bridge structures based on requirements of economics; maintenance, aesthetics and safety; modern trends in bridge design and construction; analysis of existing bridges; numerical examples. A project.

CIVI 6301 Hydrology (4 credits)
(Cannot be taken for credit by students who have completed the undergraduate equivalent).
Weather elements; precipitation, stage-discharge relations; evapo-transpiration; ground water flow, method of images; streamflow hydrograph, unit hydrograph and its applications, synthetic hydrographs; laminar flow; hydrologic routing; instantaneous hydrography; hydraulic routing, method of characteristics, kinematic routing; statistical analysis, confidence intervals, stochastic generator, auto-regressive model; applications of hydrology. A case study and a project.

CIVI 6331 Hydraulic Engineering (4 credits)
(Cannot be taken for credit by students who have completed the undergraduate equivalent).
Development of surface water resources; basic measurements in hydraulic engineering; storage reservoirs; practical problems; run-off characteristics of natural streams; control structures; economic analysis; energy dissipators; sediment transportation; transitions; elements of river engineering; navigation; control of floods. A case study and a project.

CIVI 6381 Hydraulic Structures (4 credits)
(Cannot be taken for credit by students who have completed the undergraduate equivalent).
Design of storage dams; characteristics of spillways and other outlet works; design of control structures; principles and design of flow measuring structures; special topics. A project.

CIVI 6401 Transportation Systems Analysis (4 credits)
Aspects of probability and statistics as applied to transportation; network theory; system operations and safety management; applications of optimization and decision theory to selection of alternative systems and facility location; evaluation of traffic control devices; signal timing plans and management strategies. A project.

CIVI 6411 Urban Transportation Planning (4 credits)
(Cannot be taken for credit by students who have completed the undergraduate equivalent).
Forecasting future travel patterns; travel characteristics; systems approach to transportation planning process; land use data collection and demand analysis; trip generation; trip distribution; model and root assignment; transportation of commodities; environmental impact analysis. Computer modelling. A project.

CIVI 6441 Traffic Engineering (4 credits)
(Cannot be taken for credit by students who have completed the undergraduate equivalent).
Analysis of existing traffic flow conditions; study of traffic characteristics; volume and speed surveys; capacity-performance relations for urban streets and intersections; signal timing and coordination; traffic and environmental management; computer applications in incident detection and control; analysis and management of safety. A project.

CIVI 6451 Pavement Design (4 credits)
Components of pavement systems; materials, tests and specifications; granular and treated bases, subgrade and drainage; earthwork and soil stabilization; axle loads and stresses in pavements; design methods for flexible and rigid pavements of highways and airports; maintenance and rehabilitation; pavement management; economic requirements; design projects and computer applications. A project.

CIVI 6481 Hazardous Waste Management (4 credits)
Characterization and sources of hazardous waste; toxicological aspects of waste management; legal issues; disposal; storage; physical, chemical and biological treatments; recycling, reuse and exchange; life cycle; environmental impact management in the light of ISO 14000; "Green" product as an environmental choice; lab demonstrations. A case study and a project.

CIVI 6491 Engineering Aspects of Site Remediation (4 credits)
Physico-chemical characteristics of subsurface; soil biology; introduction to subsurface transport of contaminants; site assessment techniques; bioremediation principles and techniques; physico-chemical remediation; thermal removal; in-situ and ex-situ groundwater techniques; natural attenuation; case studies; lab demonstrations. A project.

CIVI 6501 Foundation Engineering (4 credits)
Theoretical development of bearing capacity of shallow and deep foundations, settlement analyses, design of retaining walls, sheet piles, tiebacks and caissons, dynamic analyses of pile foundations, design of machine foundations, foundations on difficult soils, construction and performance of foundations, computer applications, case histories. A project.

CIVI 6511 Earth Structures and Slope Stability (4 credits)
Design and construction of earth and rockfill dams. Seepage problems, flow nets, seepage control, soil compaction and stabilization. Computer analysis of slope stability, factor of safety. Measures taken to limit and accommodate settlements. Case studies.

CIVI 6521 Soil Behaviour (4 credits**)**
Drained and undrained shear strength of soils, stress-strain relationships, two and three dimensional stress paths. Pore water pressure coefficients in saturated and partially saturated clays. One and three dimensional consolidation theories, design of sand drains, and applications. Special geotechnical problems. A project.

CIVI 6531 Soil Testing and Properties (4 credits)
Measurement and evaluation of soil consolidation, strength, and pore water pressure characteristics by means of consolidation, triaxial and direct shear tests. Application of test results to design and research problems. A project.

CIVI 6541 Reinforced Earth (4 credits)
Design of geotechnical structures reinforced with geotextiles and geogrids to improve their strength and deformation properties. Use of geonets and geomembranes to accelerate the drainage and consolidation of soil systems. Soil nailing and inclined piling to prevent downhill creep and slope failure. Analysis and design of stone columns used to support light structures and prevent instability due to soil liquefaction. A project.

CIVI 6601 Modelling in Building and Environmental Engineering (4 credits)
Continuous and discrete forms of conservation laws: mass, momentum and energy, numerical methods (finite differences, implicit and explicit schemes, finite elements). Transport of contaminants and moisture in buildings and contaminants in the environment. Modelling and measuring sources and sinks of pollutants. Computer applications to building and environmental engineering. A case study and project.

CIVI 6611 Environmental Engineering (4 credits)
Introduction to waste water treatment and control; stream pollution and control; ground water pollution; air pollution; acid rain, meteorological aspects. Noise pollution; hazardous waste disposal; solid waste management. A case study and a project.

CIVI 6621 Engineering Aspects of Biological Treatment of Water and Air (4 credits)
Introduction to aerobic/anaerobic microbial processes, design of aerobic and anaerobic systems for biological treatment of municipal, industrial and agricultural water and air pollution, design and modelling of activated sludge reactors, trickling filters, plug flow reactors, lagoons, nutrient removal, constructed wetlands, phytoremediation, biofilters, bioscrubbers, management of biosolids, lab demonstration. A case study and project.

CIVI 6631 Transportation of Hazardous Materials and Wastes (4 credits)
Transportation and Environmental systems interface; hazardous materials and wastes, accidental spills and releases, dispersion models, environmental

impacts; transportation network, truck accidents related to hazardous materials and wastes, risk analysis, risk assessment models; Moore's minimum path algorithm, minimum-risk route models, determination of safe truck routes and management; Federal and Quebec regulations; project and computer applications. A case study and a project.

CIVI 6641 Unit Operations in Environmental Engineering (4 credits)
Physical and chemical principles underlying coagulation, flocculation, sedimentation, sorption, reverse osmosis, electrodialysis, ion exchange and sludge dewatering. Design and scale-up equations for clarifiers, absorption columns, filters, centrifuges, electrodialysis stacks, air components and demineralization units, lab demonstration. A case study and a project.

CIVI 6651 Water Pollution and Control (4 credits)
Physical, chemical and biological characteristics of water, water quality standards, reaction kinetics and material balances, eutrophication. Containment of reactive contaminants. Natural purification processes in water system, adsorption, absorption; diffusion and dispersion, oxidation. Large-scale transport of contaminants, single and multiple source models; modeling of transport processes, computer simulation, introduction to groundwater pollution, sea-water intrusion. A case study and a project.

CIVI 6661 Environmental Impact Assessment (*) (4 credits)
Engineering activities and the environment; environmental ethics. Prediction and estimation, statistical analysis of impact on air, water, soil quality and biological, socio-economic, cultural environments. Water and air pollution law, solid and hazardous waste laws. Applications of GIS, Environmental inventories, assessment preparation and review. Federal and provincial laws and regulations on environmental assessment. Strategies for environmental compliance, resolution of environmental conflicts. Case studies and project.

CIVI 6671 Fate and Transport of Contaminants in the Environment (4 credits)
Physical and chemical properties of organic and inorganic contaminants, air-soil-water-cycle and contaminant interactions, adsorption/desorption models, soil components in contaminant transport, influence of groundwater composition, advective flow, diffusion transport, diffusion and dispersion coefficients, partition coefficients, mechanisms and modelling of contaminant transport in soil and groundwater, environmental fate of contaminants Case studies concerning landfills, greenhouse effects, soil and groundwater interactions, nuclear waste disposal. A project.

CIVI 691 Topics in Civil Engineering I (4 credits)
Note: Subject matter will vary from term to term and from year to year. Students may re - register for these courses, providing that the course content

has changed. Changes in content will be indicated by the letter following the course number. e.g. CIVI 691A, CIVI 691B, etc.

CIVI 7001 Earthquake Engineering (4 credits)
Earthquake ground motion characteristics; behaviour of buildings, bridges, etc., methods and principles of structural dynamics; inelastic action and concept of energy absorption; evaluation of damage; soil structure interaction problems; design methods and code requirements; current research. A project. *Prerequisite*: ENGR 6581.

CIVI 7031 Dynamics of Foundations (4 credits)
Principles of soil dynamics; dynamic loads, theory of vibrations and design considerations for foundations of different types; shallow foundations, deep foundations, massive machine bases; problems of soil-structure interaction. A project. *Prerequisite*: ENGR 6581.

CIVI 7101 Theory and Design of Orthotropic Bridges (4 credits)
Natural and technical orthotropy; orthogonally stiffened plates; methods of bridge analysis and design; materials; specifications; analysis of existing orthotropic structures; numerical examples. A project. *Prerequisite*: CIVI 6101.

CIVI 7111 Theory and Design of Modern Bridge Systems (4 credits)
Hybrid, post-stressed and composite plate girders and trusses; delta type girders; orthotropic, shell types and tubular bridges, cable-stayed and stiffened cable bridges; optimization of bridge systems; vibrations and damping capacity; aerodynamics and seismic stability; concept of safety; fatigue and carrying capacity; use of models; application of computers. A project. *Prerequisite*: CIVI 6101.

CIVI 7121 Cable Stayed Bridges (4 credits)
Basic bridge systems; methods of structural analysis; aerodynamic stability; structural details; typical structures. A project. *Prerequisite*: CIVI 6101.

CIVI 7311 Groundwater Flow (4 credits)
Groundwater storage and supply; storage in confined aquifers; water table fluctuation; aquifers; steady groundwater hydraulics; aquifer tests and pumping. A project. *Prerequisite*: ENCS 6021.

CIVI 7401 Design of Transportation Terminals (4 credits)
Functions of transportation terminals; airports, seaports, public transit terminals; systems approach to passenger and freight terminal design; criteria for evaluating the inter-modal transfer process and user requirements. Simulation models and analytical techniques for quality of service analysis and evaluation of terminal configurations; requirements of new systems; high capacity aircraft; V/STOL aircraft, LRT and HST systems. A project. *Prerequisite*: CIVI 6401 or 6411.

CIVI 791 Topics in Civil Engineering II (4 credits)
Note: Subject matter will vary from term to term and from year to year. Students may re-register for these courses, providing that the course content has changed. Changes in content will be indicated by the letter preceding the course number. e.g. CIVI A691, CIVI B691, etc.

CIVI 8011 Doctoral Seminar in Civil Engineering
Grading on a pass/fail basis only. No credit value.

Course Descriptions – Electrical and Computer Engineering

COEN 5301 Object Oriented Programming (3 credits)
Simple types, variable, Statements, Operations, Expressions, Control structures, Input, Output. Classes, Objects, Constructors, Member functions, Inheritance, polymorphism, Templates. Introduction to Object Oriented software process, specification vs. implementation. Lectures: three hours per week.

COEN 5311 Data Structures and Algorithms (3 credits)
Specification and implementation of fundamental data structures: sets, tables, lists, trees, stacks, queues. The different variations. Algorithms for manipulating these data structures. The usage and importance of these data structures in software design. Lectures: three hours per week. *Prerequisite*: COEN 5301.

COEN 5601 Introduction to Real-time Systems (3 credits)
General principles of real-time systems; Requirements and specification methods; Architectural issues; Scheduling theory; Programming languages; Concurrency; Real-time memory management; Device and resource management; Reliability and fault-tolerance; Performance analysis; Real-time communication protocols; Case studies of real-time operating systems; Standards (e.g., POSIX, ETSI, ITU, etc.) Lectures: three hours per week.

COEN 6311 Software Engineering (4 credits)
Software life cycle, software requirements and requirement documentation. software design: top-down and bottom-up approaches; design validation and design reviews. software implementation, choice of a programming language and portability. Testing, debugging and verification. Design of test cases. software documentation and its maintenance. documentation tools and documentation portability, user interface design. Lectures: three hours per week. Project: two hours per week. *Prerequisite:* COEN 5311.

COEN 6321 Applied Genetic and Evolutionary Systems (4 credits)
Motivation for the use of genetic algorithms (GAs). Theory: the Schema Theorem, the K-armed Bandit, the Building Block Hypothesis, the Idealized GA, comparison of GA s. Methodology: representation, fitness and selection,

crossover and mutation, parameterization and constraints, implementation. Applications: function optimization, evolving computer programs, optimizing a pattern recognizer, system modeling. Identification of classes of problems suitable for the use of GAs. Lectures: three hours per week. Project: two hours per week. *Prerequisite*: COEN 5301.

COEN 6331 Neural Networks (4 credits)
Fundamentals of artificial neural networks; rigorous analysis of and introduction to various network paradigms: perceptrons, backpropagation, counter-propagation, Hopfield nets, bi-directional associative memories, adaptive resonance theory, cognitron and neocognitron; neural network topologies, memories, learning, stability and convergence; applications to adaptive knowledge, knowledge processing, classification, pattern recognition, signal processing, communications, robotics and control; and assessment of current neural network technology. Lectures: three hours per week. Project: two hours per week. *Prerequisites:* COEN 5301, ENGR 6131.

COEN 6501 Digital System Design and Synthesis (4 credits)
This course introduces students to VHDL language and modeling digital circuit with VHDL. Topics include: arithmetic and logic circuits. Storage devices. Finite State Machines. Algorithmic State Machines. Timing issues. Asynchronous Design. VHDL and modeling with VHDL. Synthesis and architectural models for synthesis. Project involving system design and modeling. Lectures: three hours per week. Project: two hours per week.

COEN 6511 VLSI Circuit Design (4 credits)
Physical design of digital circuits using technologies of Very Large Scale Integration. CMOS and BiCMOS logic blocks. CMOS processing technology, design rules, CAD issues, and limitation of CMOS technologies. Physical layouts and parasitic elements of CMOS circuits. Characterization and performance evaluation. Electrical simulation using HSPICE. Design and implementation of CMOS logic structures, interconnects, and I/O structures, emphasis on optimizing operation speed and/or power dissipation/ distribution. Project of circuit design using a specified CMOS technology. Lectures: three hours per week. Project: two hours per week.

COEN 6521 Design for Testability (4 credits)
Stuck-At faults, observability, controllability, fault coverage, test vectors, automatic test pattern generation (ATPG), statistical fault analysis, ad-hoc testing, level sensitive scan design (LSSD), serial scan, parallel scan, signature analysis and BILBO, boundary scan, built-in-self-test (BIST), IDDQ testing. Lectures: three hours per week. Project: two hours per week. *Prerequisite:* COEN 6501 or COEN 6511.

COEN 6531 ASIC Synthesis (4 credits)
Introduction to high level synthesis; synthesis models. The synthesis process; High Level Description Languages; scheduling; chaining and pipelining; clock optimization and synthesis; I/O synthesis. Behavioral synthesis; architectural trade-offs in power, area and delay. Design flow with FPGAs; design flow with full-custom and semi-custom ASIC's. Lectures: three hours per week. Project: two hours per week. *Prerequisite*: COEN 6501 or COEN 6511.

COEN 6611 Real-time Systems (4 credits)
Taxonomy of real-time systems; Scheduling algorithms for static and dynamic tasks; Fault-tolerance and reliability; Resource and resource access control; Multiprocessor scheduling, resource access control, and synchronization; Real-time communication, Case studies in distributed real-time systems (e.g., HARTS, MARS, Spring, etc.) 3 hrs lecture per week, Lectures: three hours per week. Project: two hours per week. *Prerequisite*: COEN 5601.

COEN 6711 Microprocessors and Their Applications (4 credits)
Introduction to microprocessors and their architectures. Examples of various microprocessors. Bus and I/O Organizations. Addressing modes. Timing. Software related issues. Memory and its hierarchy. Static and dynamic memory interfacing. Synchronous and asynchronous interfacing. Interrupts. DMA. Use of Co-processors. Single chip Micro-controllers. Examples of microprocessor applications at the system level. Lectures: three hours per week. Project: two hours per week.

COEN 6721 Fault-Tolerant Distributed Systems (4 credits)
Fundamentals of the design and analysis of fault-tolerant systems, Models for distributed systems, Fault/error models, Techniques for providing hardware/software redundancy, Fault-detection in multiprocessors, Stable storage, Recovery strategies for multiprocessors (checkpointing), System diagnosis, Software design faults, Experimental validation techniques, Case studies in fault-tolerant distributed systems. Lectures: three hours per week. Project: two hours per week.

COEN 6741 Computer Architecture and Design (4 credits)
Review of basic computer architecture designs. Fundamentals of computer design and performance. Cost issues. Instruction set design principles. Memory hierarchies: registers, caches and virtual memories. Basic processor implementation issues. High performance computing issues such as pipelining, superscalar and vector processing. Input/output subsystem designs. Lectures: three hours per week. Project: two hours per week.

COEN 691 Topics In Computer Engineering I (4 credits)
Note: Subject matter will vary from term to term and from year to year. Students may re-register for these courses, providing that the course content has

changed. Changes in content will be indicated by the letter following the course number, e.g. COEN 691A, COEN 691B, etc.

COEN 7311 Protocol Design and Validation (4 credits)
OSI model, introduction to seven layers, protocols, services. Protocol modelling techniques: FSM models, Petri net models, Hybrid models. Temporal logic. Protocol specification languages of ISO: Estelle model and language. Lotos model and language. Protocol implementation and techniques from formal specification to implementation. Protocol verification techniques: communicating FSM, reachability analysis, verification using checking, protocol design validation. Protocol performance: performance parameters, performance measurement by simulation, extensions to Estelle. Protocol testing: test architectures, test sequences, test sequence languages, test design methodology. Lectures: three hours per week. Project: two hours per week. *Prerequisites*: (COEN 6311, ELEC 6851) or (COMP 554, COMP 6461).

COEN 7501 Hardware Formal Verification (4 credits)
Context of formal verification in circuit design methodology. Hardware description languages. Introduction to mathematical logic (propositional, first-order, higher-order). Overview and classification of existing verification methods. Modeling hardware using Binary Decision Diagrams: BDD representations, structure and behavior modeling, advanced BDD techniques and limitations. Decision diagrams based verification: temporal logic, liveness and safety properties, model checking, automata equivalence, automated verification tools Theorem proving verification: predicate logic, abstraction techniques, structure and behavior descriptions, proof techniques and tools Case Studies: Intel Pentium FPU bug verification, Ethernet protocol verification, Cache memory coherence verification, Pipelined processor verification, ATM switch verification. Lectures: three hours per week. Project: two hours per week. *Prerequisite*: COEN 6501.

COEN 7741 Advanced Computer Architecture (4 credits)
Multiprocessing, Parallel processing, Vector processing, MIMD, SIMD, ILP (Instruction Level Parallelism), Superscalar, VLIW, Multithreading, Systolic processors, etc. Lectures: three hours per week. Project: two hours per week.
Prerequisite: COEN 6741.

COEN 791 Topics In Computer Engineering II (4 credits)
Note: Subject matter will vary from term to term and from year to year. Students may re-register for these courses, providing that the course content has changed. Changes in content will be indicated by the letter following the course number, e.g. COEN 791A, COEN 791B, etc.

ELEC 6051 Introduction to Analog VLSI (4 credits)
Challenges of IC techniques and of VLSI, BJT and MOS processes. Passive components; network models and simulations. Layout design rules and CAD

packages. Switch, active resistor, current mirror and voltage references; differential amplifiers, comparators, operational amplifiers, transinductance amplifiers, voltage to current transducers. Noise considerations. Offset and precision techniques. Applications: RF amplifiers, filters, oscillators, current mode IC networks. Lectures: three hours per week. Project: two hours per week.

ELEC 6061 Real-time Computer Control Systems (4 credits)
Introduction to real-time computer control systems; a review of discrete-time signals and systems, difference equations, z-transform; sampled data systems, sample and hold, discrete models; discrete equivalents of continuous-time systems; stability analysis; design specifications; design using root locus and frequency response methods; implementation issues including bumpless transfer, integral windup, sample rate selection, pre-filtering, quantization effects and computational delay; scheduling theory and priority assignment to control processes, timing of control loops, effects of missed deadlines; principles and characteristics of sensors and devices, embedded processors, processor/device interface. Lectures: three hours per week. Project: two hours per week.

ELEC 6071 Analog VLSI techniques for Signal Processing (4 credits)
Review of analog IC building blocks. Low power, low voltage signal processing. Wide-band current mode signal processing. Neural information processing, Sampled data signal processing. Statistical analysis techniques. Lectures: three hours per week. Project: two hours per week. *Prerequisite:* ELEC 6051.

ELEC 6081 Modern Analog Filter Design (4 credits)
Active filters. Operational amplifier operational transconductants and current conveyor based designs. Sensitivity considerations. Realization of components in integraded circuit filters. GIC and FDNR techniques. Cascade, operational simulation and multiple feedback methods. Switched capacitor filters. Parasitic insensitive switched capacitor filters. Current mode filters. Lectures: three hours per week. Project: two hours per week. *Prerequisite:* ELEC 6051.

ELEC 6091 Discrete Event Systems (4 credits)
Introduction to discrete-event systems (DES). Modeling (languages, automata and Petri nets). Supervisory control (controllability, modular control and control under partial observation). Architecture (decentralized and hierarchical schemes). Petri nets (modeling and analysis). Timed models. Lectures: three hours per week. Project: two hours per week.

ELEC 6111 Detection and Estimation Theory (4 credits)
Basic hypothesis testing, cost functions, Bayes and Neyman Pearson tests, the power of a test, sequential tests; estimation, Bayes estimates, maximum a posteriori estimates. the Cramer-Rao inequality, maximum likelihood estimates; composite hypothesis testing, application of estimation theory to phase locked loops, vector representation of signals in noise, application of the Kharhunen-Loeve expansion, complex analytic representation of signals;

detection and estimation of signals in white and non-white noise, the matched filter, composite hypothesis testing, random amplitude and phase, multi-path channels, waveform estimation, Wiener filters, Kalman filters. Lectures: three hours per week. Project: two hours per week. *Prerequisite*: ENCS 6161 or ELEC 6161.

ELEC 6121 Spread Spectrum Communications (4 credits)
Direct sequence, frequency hopping, time hopping, chirp and hybrids, maximal Gold and nonlinear codes, probability or error analysis, under tone, partial band jamming for different systems, serial and parallel, initial acquisition, delay lock loops and tau dither loops, fading effects and potential coding techniques, new acquisition and tracking techniques, interception and repeated jammers. Lectures: three hours per week. Project: two hours per week. *Prerequisite:* ELEC 6831.
Note: Students who have received credit for ELEC 7131 may not take this course for credit.

ELEC 6131 Error Detecting and Correcting Codes (4 credits)
Communication channels and the coding problem; important linear block codes (cyclic, Hamming and BCH codes); encoding and decoding with shift registers; threshold decoding; introduction to convolutional codes; coding in system design considerations, bit error rates and coding gain, trade-offs in power, bandwidth, data rate and system reliability; codulation. 3 hrs lecture per week, Project: two hours per week. *Prerequisite*: ENCS 6161 or ELEC 6161.

ELEC 6141 Advanced Digital Wireless Transmission (4 credits)
Transmission media, analog transmission and multiplexing, digital transmission and multiplexing, link calculations, satellite transmission, microwave transmission, fading channels, nonlinear channels, intermodulation, multiple-access techniques: TDMA, FDMA, point-to-multipoint communications systems, performance objectives, measurement techniques, mobile communications systems. Lectures: three hours per week. Project: two hours per week. *Prerequisite:* ELEC 6831.

ELEC 6151 Information Theory and Source Coding (4 credits)
Entropy of a source, rate distortion functions, source coding, analog to digital conversion, effects of sampling and quantization, vector quantization. discrete memoryless channels and their capacity, cost functions, channel coding theorem, channel capacity, fundamental concepts of information theory with applications to digital communications, theory of data compression, broadcast channels, application to encryption, DES, public key encryption, computational complexity. Lectures: three hours per week. Project: two hours per week. *Prerequisite*: ENCS 6161 or ELEC 6161.

ELEC 6161 Stochastic Processes for Communications and Signal Processing (4 credits)

Bayesian, maximum likelihood and mean-square estimation, mean square sense ergodicity, differentiation and integration, Wiener and Kalman filters, nonlinear systems with stochastic input, direct and Rice methods for calculation of an autocorrelation function, linearization methods, discrete-time Markov chains, state occupancy time, global balance, limiting probabilities, Markov process, Gauss-Markov (Ornstein-Ulenbeck) process. Lectures: three hours per week. Project: two hours per week.

Note: Student who have received credit for ELEC 7141 or ENCS 6161 may not take this course for credit.

ELEC 6171 Modeling and Analysis of Telecommunications Networks (4 credits)

Application of queuing theory to the analysis of the performance of telecommunication systems; Poisson arrival process and its properties; Birth-death processes applied to queuing, service distributions; performance measures of a queuing systems; examples of queuing systems in equilibrium; finite and infinite server and population models; Erlang blocking formulae; method of stages.; Networks of queues; product-form solution for open and closed queuing networks; computational algorithms for queuing networks; the imbedded Markov chain technique applied to queues with general service distribution, analysis of multiple access techniques, TDMA, FDMA, polling, CDMA, ALOHA and CSMA. Lectures: three hours per week. Project: two hours per week. *Prerequisite*: ENCS 6161 or ELEC 6161.

ELEC 6181 Real-time and Multimedia Communication over Internet (4 credits)

Review of Internet architecture and protocols. Network impairments: jitter and delay. RTP: transport protocols for real-time data. Packet scheduling, QoS in the Internet: differentiated services, integrated services, Resource reservation protocol (RSVP), Multi protocol label switching (MPLS). Voice/Fax/Video over IP. Internet-to-PSTN. Protocols and standards - H.323, Session Initiation Protocol (SIP) and Media Gateway Control Protocol (MGCP). Internet telephony signaling. Interoperability issues. Lectures: three hours per week. Project: two hours per week. *Prerequisite:* ELEC 6851.

ELEC 6221 Solid State Devices* (4 credits)

Junction theory (PN junctions, Schottky and ohmic contacts, heterojunctions). Diodes and bipolar transistors. Light emitting diodes, photodetectors, solar cells and fibre optics. Lasers: operating principles and applications in optoelectronic devices. Planar silicon junctions and transistors will be designed, fabricated and evaluated in the laboratory, including resistivity measurements, semiconductor cleaning, oxidation, diffusion, photolithography, etching, metallization, and the comparison of design with experimental results. Lectures: three hours per week. Laboratory: two hours per week.

ELEC 6231 Design of Integrated Circuit Components* (4 credits)
The structure, characteristics, and design of MOS capacitors and MOSFETsi Structures, characteristics and design of laser diodes. Optoelectronic devices and integrated circuits Planar MOS devices, including capacitors and MOSFETs will be designed, fabricated and evaluated in the laboratory. Lectures: three hours per week. Laboratory: two hours per week.

ELEC 6241 VLSI Process Technology* (4 credits)
Introduction to basic VLSI technologies; crystal growth, thermal oxidation, diffusion, ion implantation, chemical vapour deposition, wet and dry etching, and lithography. Layout, yield, and VLSI process integration. The lab demonstrates a semiconductor device fabrication process. Lectures: three hours per week. Laboratory: two hours per week.

ELEC 6251 Microtransducer Process Technology (4 credits)
Overview of micromachining process. Bulk-micromachined structures and devices. Anisotropic etching of silicon; phenomena, processes, geometry, crystal physics. Surface-micromachined structures, devices, processes. CMOS-compatible micromachining. Case-study examples. Lectures: three hours per week. Project: two hours per week. *Prerequisite*: ELEC 6231 or ELEC 6241.

ELEC 6261 Optical Devices for High-Speed Communications (4 credits)
Overview of optical properties of semiconductors. The fundamental principles for understanding and applying optical fiber technology, fundamental behaviour of the individual optical components and their interactions with other devices. Lasers, LED's, optical fibers, light detectors, optical switches. Concepts and components of WDM and DWDM. A comprehensive treatment of the underlying physics such as noise and distortion in optical communications, light polarization, modulation and attenuation. Lectures: three hours per week. Project: two hours per week. *Prerequisite*: ELEC 6221 or equivalent.

ELEC 6271 Nanoscience and Nanotechnology: Opto-Electronic Devices (4 credits)
This course covers the fundamental principles of nanoscience and nanotechnology which include principles of quantum mechanics and quantum properties of solid state materials. Properties of metal and semiconducting nanoparticles and their synthesis; Carbon nanostructures and nanotubes; bulk nanostructured materials; Solid disordered nanostructures and nanostructured crystals; quantum wells, quantum wires, and quantum dots and their physical properties; preparation of quantum nanostructures, Introduction to NanoElectroMechanical Systems (NEMS), nanomachining and fabrication of nanodevices. Lectures: three hours per week. Project; two hours per week.

ELEC 6301 Advanced Electromagnetics (4 credits)
Fundamental concepts. Conservation theorems, reciprocity, polarization and boundary conditions. Propagation in isotropic and anisotropic media. Plane

waves in lossless and dissipative media. Reflection, transmission, guidance and resonance problems in rectangular coordinates. Solutions in cylindrical and spherical coordinate systems. Radiation. Scattering. Perturbational and variational techniques. Lectures: three hours per week. Project: two hours per week.

ELEC 6341 Antennas* (4 credits)
Antenna fundamentals and definitions. Radiation integrals. Dipoles and loops. Arrays. Antenna self and mutual inductance. Matching techniques. Travelling wave antennas. Broadband antennas. Equivalence principle. Aperture antennas. Numerical techniques. Antenna measurement techniques. Lectures: three hours per week. Laboratory: two hours per week.

ELEC 6351 Modern Antenna Theory (4 credits)
Helmholtz equation, Green's function, current element, the ideal dipole, radiation impedance, gain directivity, reciprocity, polarization. Half-wave dipole, antennas above ground, small loop antenna, arrays of antenna, array factor, pattern multiplication array synthesis, mutual impedance, aperture antenna. Hallens integral equation, Pocklingon s equation, numerical solution by the method of weighted residuals, and by the moment method, wire grids. Magnetic field integral equation and solid surfaces. Aperture antennas, aperture integration, geometrical optics, physical optics. Geometrical theory of diffraction, wedge diffraction coefficients, applications, multiple diffraction and diffraction by curved surfaces. Lectures: three hours per week. Project: two hours per week. *Prerequisite:* ELEC 6341.
Note: Students who have received credit for ELEC 7341 may not take this course for credit.

ELEC 6361 Acoustics* (4 credits)
Sound generation and propagation in elastic media; conversion between acoustical, electric and mechanical energy. Lumped-parameter approximations, sound in rooms, underwater acoustics, microphones; loudspeakers and audio communications problems; noise and vibration control problems. Lectures: three hours per week. Project: two hours per week.

ELEC 6371 Design of Wireless RF Systems (4 credits)
Introduction to wireless systems. Noise and distortion in microwave systems. Antennas and propagation. Amplifiers. Mixers. Transistor oscillators and frequency synthesizers. Modulation techniques. Receiver design. Use of RF CAD tools. Lectures: three hours per week. Project: two hours per week. *Prerequisite:* ELEC 6391.

ELEC 6381 Techniques in Electromagnetic Compatibility (4 credits)
Introduction to EMC procedures, control plans and specifications. Radiated and conducted susceptibility and emission testing. Introduction EMC antennas, antenna concepts, electric and magnetic dipoles, biconical dipoles, conical log

spiral antennas, setting up fields for susceptibility testing, measuring radiation from equipment. Coupled transmission lines, pulse propagation, closely spaced parallel transmission lines, capacitive coupling, inductive coupling, shielding against magnetic fields. Shielding and enclosures, electric and magnetic field screening mechanisms, shielding effectiveness, grounding considerations. EMC test facilities, screened rooms, TEM cells. signals and spectra, intermodulation, cross-modulation, the spectrum analyzer. Noise and pseudo-random noise, noise performance of measurement/receiving systems, noise equivalent bandwidth, noise figure, antenna noise temperature and S/N ratio. Lectures: three hours per week. Project: two hours per week.

ELEC 6391 Microwave Engineering* (4 credits)
Properties of waveguides, striplines and microstrips. Scattering parameters. Butterworth and Chebyshev impedance transformers. Microwave couplers, cavities, and Fabry-Perot resonators. Periodic structures. Microwave filter design. Faraday rotation and non-reciprocal devices. Lectures: three hours per week. Laboratory: two hours per week.

ELEC 6411 Power Electronics I* (4 credits)
Introduction to power electronic systems. Semiconductor switches. Basic power converter configurations. Line commutated controlled and uncontrolled ac-dc rectifiers. Basic dc-dc converters. Pulse width modulation techniques. Basic dc-ac converters. Switching power supplies. Applications to industrial power supplies and motor drives. Lectures: three hours per week. Laboratory: two hours per week.

ELEC 6461 Power Electronics II (4 credits)
Circuits and operating principles of self commutated dc-dc and dc-ac converters. One and four quadrant dc-dc converters. Single-phase and three-phase voltage source and current source inverters. Pulse width modulation strategies. Resonant converters. Soft switching techniques. Isolated dc-dc converters. Application to switch-mode power supplies, uninterruptible power supplies and ac motor drives. Lectures: three hours per week. Project: two hours per week. *Prerequisite*: ELEC 6411.

ELEC 6481 Computer-aided Analysis of Power Electronic Systems (4 credits)
Algorithms for the systematic formulation of equations for power electronic converters containing passive and active elements, and semiconductor switches. Modeling of semiconductor switching devices. Description of general-purpose simulation packages. Modeling of static power converters; average modeling. Simulation of power and control circuits. Design of controllers. Case studies of common converters. Lectures: three hours per week. Project: two hours per week. *Prerequisite*: ELEC 6411.

ELEC 6491 Controlled Electric Drives (4 credits)
Elements of a drive system; characteristics of common mechanical systems; drive characteristics; operation in one, two or four quadrants. Control of dc motors; fully controlled rectifier drives; chopper drives. Control of polyphase induction motors; voltage-source inverter drives; current-source inverter drives; voltage control; slip-energy recovery. Control of synchronous motors; wound field motors; permanent magnet motors. Interface issues; harmonics; active rectifiers; motor application issues. Typical industrial drives. Lectures: three hours per week. Project: two hours per week. *Prerequisite:* ELEC 6411.

ELEC 6601 Digital Signal Processing (4 credits)
Review of discrete-time signals and systems; difference equation, the Fourier transform, the z-transform, the discrete Fourier series and transform; recursive and non-recursive digital filters, common digital filter converters, digital processing of analog signals, signal interpolation and decimation; effect of finite word lengths, description of a typical DSP chip. Lectures: three hours per week. Project: two hours per week.

ELEC 6611 Digital Filters (4 credits)
Approximation and design of recursive and non-recursive digital filters. Transformations. Stability. Digital filter structures including wave and lattice structures. Effect of quantization, noise and limit cycles. Hardware implementation. Digital filter applications. Lectures: three hours per week. Project: two hours per week. *Prerequisite*: ELEC 6601.

ELEC 6621 Digital Waveform Compression (4 credits)
Numerical representation of waveform information; common waveform communication systems; statistical models used for waveforms; visual psychophysics. Differential PCM, motion estimation/compensation for video compressions. Transform coding: run length coding, Huffman and arithmetic coding, control of Q factor and Q table, segmentation/contour/edge based coding; pre-processing and post-processing strategies. Vector quantization. Sub-band coding and Wavelet Transform. Zero trees. Channel concerns: robustness, error recovery, masking video/image bit rate source models. Coding of two-level graphics. Review of standards: JPEG, MPEG, H.261. Lectures: three hours per week. Project: two hours per week. *Prerequisites*: ELEC 6601; ENCS 6161 or ELEC 6161.

ELEC 6631 Digital Video Processing (4 credits)
Video processing fundamentals; video signals and systems. Fourier analysis of video signals, video scanning and transmission, spatio-temporal sampling, selected material on the Human Visual System, modelling of video components, motion estimation and representation. Video filtering and enhancement: noise reduction, noise estimation, de-interlacing, frame-rate conversion, signal processing for improved TV-systems. An introduction to video compression, Low-level video analysis: local operators, linear and non-linear operators, rank-

order filters, morphological filters, edge detection, segmentation. Lectures: three hours per week. Project: two hours per week. *Prerequisites:* ELEC 6601; ENCS 6161 or ELEC 6161.

ELEC 6831 Digital Communications I (4 credits)
Random processes and linear systems; baseband modulation/demodulation, optimal receivers in AWGN, correlation and matched-filter receivers, pulse shaping for band-limited channels; bandpass modulation techniques such as PAM, PSK, DPSK, FSK, QAM; Introduction to error control coding, Linear block codes, Cyclic codes, Convolutional codes. Lectures: three hours per week. Project: two hours per week.

ELEC 6841 Digital Communications II (4 credits)
Convolutional codes, maximum likelihood decoding, the Viterbi Algorithm, performance of convolutional codes; Equalization, zero-Forcing MMSE; Link budget analysis, noise figure, noise temperature; Modulation, and coding tradeoff, trellis-coded modulation; Synchronization, timing recovery, carrier recovery; Multiple access techniques, TDMA, FDMA, CDMA. Lectures: three hours per week. Project: two hours per week. *Prerequisite*: ELEC 6831.

ELEC 6851 Telecommunications Networks (4 credits)
Communication Networks and Services; Introduction to Layered Network Architectures; Transmission systems and the Telephone Network: multiplexing circuit switching, routing and signaling; Peer-to-Peer Protocols: ARQ protocols, data link controls, packet multiplexing, Multiple Access Communications: Aloha, CSMA, reservation schemes, polling, token-passing ring, LAN standards, LAN Bridges; Packet-switching Networks: Datagrams and virtual circuits; TCP/IP Architecture: Internet protocol, transmission control protocol. Lectures: three hours per week. Project: two hours per week.

ELEC 6861 Higher Layer Telecommunications Protocols (4 credits)
Broadband communications: concept, issues, signaling techniques, examples. Multimedia communications: traffic characteristics, classes, issues (e.g. QOS) and architectures. Internetworking: issues, architectures (e.g. router, bridge, gateway), protocols and standards: ISO, IP and IPv6. Network Management: issues, architecture, management information base (MIBs), SNMP, TMN and CMIP. Advanced topics, such as policy approach for network management. Lectures: three hours per week. Project: two hours per week. *Prerequisite*: ELEC 6851.

ELEC 6871 Fiber-Optic Communication Systems and Networks (4 credits)
Overview of the basics of optical transmitters, optical receivers, optical fibers, optical amplifiers, and SDH/SONET. Design of optical fiber amplifiers: fiber Raman amplifiers and Erbium-doped fiber amplifiers (EDFA), theories, configurations, simulation, designs, applications, requirements for optical networks. Optical transmitters: characteristics and requirements for optical

networks. Optical receivers: characteristics, requirements, noise analysis. Optical systems and performance: system architectures, design guidelines, long-haul systems, dispersion management. Coherent optical systems: ASK, FSK, DPSK, system performance. DWDM systems and networks: WAN and MAN system performance, TDM, subcarrier multiplexing, CDMA, WDM network design, network survivability. Optical solition systems: fiber solitions, loss-managed solitions, dispersion-managed solitions, impact of amplifier noise, high-speed solition system. Photonic packet switching: OTDM synchronization, header processing, burst switching. Access optical networks: architectures, PON. Lectures: three hours per week. Project: two hours per week.

ELEC 6881 Fundamentals and Applications of MIMO Communications (4 credits)
Multiple Input Multiple Output (MIMO) communication systems and wireless channel models; Diversity techniques and array processing; MIMO channel capacity; Space-time black and trellis codes; Spatial multiplexing and layered space-time architectures, diversity-versus-multiplexing tradeoff; Differential and unitary space-time coding; MIMO OFDM and space-frequency coding; Concatenated coding and iterative decoding for MIMO systems; Applications of MIMO in wireless systems. Lectures: three hours per week. Project: two hours per week. *Prerequisite*: ELEC 6141 or ELEC 6841.

ELEC 691 Topics in Electrical Engineering I (4 credits)
See Note on page 427.

ELEC 6961 Graduate Seminar in Electrical and Computer Engineering (1 credit)
Students must attend a set of seminars identified by the Department and submit a comprehensive report on topics presented in one of these seminars. The report, including an abstract, must be suitably documented and illustrated, should be at least 1000 words in length, must be typewritten on one side of 21.5 cm by 28 cm white paper of quality, and must be enclosed in binding. Students are referred to *Form and Style: Thesis, Reports, Term Papers, fourth edition by Campbell and Ballou*, published by Houghton Mifflin. Seminar: two hours per week.

ELEC 7151 Broadband Communications Networks (4 credits)
Characterization of traffic sources, data, voice and video; ATM protocol architecture, ATM switching architectures, performance evaluation of the ATM multiplexer; Call admission control in ATM networks; Traffic management in ATM, TCP/IP over ATM and wireless ATM Fluid flow approximation, z-transform techniques, and blocking for multiclass flows. Lectures: three hours per week. Project: two hours per week. *Prerequisite*: ELEC 6171.

ELEC 7441 Design of Power Electronic Circuits (4 credits)
Design driving factors. Characteristics of basic converter topologies, including resonant and soft switching circuits. Characteristics and limitations of power

semiconductors as switching devices. Design considerations for gate drives, snubbers, power filters and protection circuits. Printed circuit board and thermal design. Application to the practical design of typical power converter systems. Lectures: three hours per week. Project: two hours per week. *Prerequisite*: ELEC 6461.

ELEC 7451 Power System Compensation (4 credits)
Steady state and dynamic characteristics of transmission systems. Theory of line compensation and reactive power control; series and shunt passive compensation. Principles of operation of static compensators and basic configurations; series, shunt and shunt-series. Flexible ac transmission systems (FACTS). Line and self commutated controllers; configurations and control aspects. Applications to distribution systems. Performance evaluation and practical applications of static compensators. Lectures: three hours per week. Project: two hours per week. *Prerequisite:* ELEC 6411.

ELEC 7601 Adaptive Signal Processing (4 credits)
Optimal filtering; filter structures for adaptive filtering; the LMS stochastic gradient algorithm; block least-squares methods; lattice structures. Convergence properties of transversal and lattice stochastic gradient algorithms. Stability and sensitivity analysis of adaptive filters. Lectures: three hours per week. Project: two hours per week. *Prerequisites:* ELEC 6601; ENCS 6161 or ELEC 6161.

ELEC 7631 Multi-dimensional Signal and Image Processing (4 credits)
Multidimensional signals and systems. Two-dimensional discrete Fourier analysis: discrete Fourier transform, computation of DFT and computational considerations. Two-dimensional FIR filters: convolutional and DFT implementations, design using windows, least-squares design. Recursive systems. Two-dimensional IIR filters: implementations, space-domain design methods, frequency domain design, design for specialized structures. One of more specialized topics: finite-word-length effects, symmetry in two-dimensional filters, signal reconstruction and real-time image processing. Lectures: three hours per week. Project: two hours per week. *Prerequisite:* ELEC 6601.

ELEC 791 Topics in Electrical Engineering II (4 credits)
See Note on page 427.

ELEC 8011 Doctoral Seminar in Electrical Engineering
Grading on a Pass/Fail basis only. No credit value.

Course Descriptions - Engineering

ENCS 6001 Elements of Engineering Mathematics (3 credits)
Functions of one variable, Taylor's series expansion, review of differentiation, integration and solution of ordinary differential equations. Functions of several variables, partial derivatives, multiple integrals, introduction to partial differential equations, wave equation and diffusion equation. Matrix and vector analysis, characteristic value problems, orthogonal functions; introduction to statistics and numerical methods. Lectures: three hours per week.

ENCS 6011 Engineering Analysis I (3 credits)
Theory and application of topics in mathematics. Topics include: matrix and vector analysis, functions of a complex variable, ordinary differential equations.

ENCS 6021 Engineering Analysis II (4 credits)
Sturm-Liouville problem; orthogonal functions; integral transforms; partial differential equations; boundary value problems; applications of above; topics in engineering problems. *Prerequisite:* ENCS 6011 or equivalent.

ENCS 6031 Engineering Analysis III (4 credits)
Calculus of variations and applications; linear vector spaces; integral equations; introduction to analysis of non-linear problems. *Prerequisite:* ENCS 6011 or equivalent.

ENCS 6101 Numerical Methods I (3 credits)
Interpolation, error analysis. Numerical integration, accuracy, efficiency and error analysis. Numerical differentiation, error bounds. Root-finding, real and complex values, convergence and error analysis, condition number and interactive improvement. Solution of systems of differential equations using single- and multi-step methods, accuracy and error analysis, approximation theory, orthogonal functions and series economization. Eigenvalues and eigenvectors. Implementation of numerical algorithms in the IMSL library routines or equivalent packages. Project is an integral part of the course.

ENCS 6111 Numerical Methods II (4 credits)
Numerical solution of partial differential equations; weighted residuals techniques with emphasis on finite differences and finite elements; convergence, stability and consistency analysis; solution of integral equations; boundary value problems; discrete Fourier series and fast Fourier transform. *Prerequisite:* ENCS 6101 or equivalent.

ENCS 6141 Probabilistic Methods in Design (4 credits)
Elements of probability theory, decision models, expected costs and benefits, models from random occurrences, extreme value statistics, Monte Carlo

simulation, reliability analysis, general applications to engineering design problems. *Prerequisite:* ENCS 6011 or equivalent.

ENCS 6161 Probability and Stochastic Processes (4 credits)
Axioms and rules of probabilities, Bayes' Theorem, binary communication systems, Bernoulli trials and Poisson Theorem, random variables, distributions and density functions, moments, correlation, Chebyshev and Markov's inequalities, characteristic functions, Chernoff inequality, transformation of random variable, random processes, stationarity, Bernoulli, Random Walk, Poisson, shot noise, random telegraph, and Wiener processes, stopping time; Wald's equation, elements of Renewal Theory, Mean-Ergodic Theorem, auto and cross-correlation functions, correlation time, auto-correlation receiver, Wiener-Khinchin Theorem, power spectral density, linear system with stochastic inputs, matched filtering.
Note: Students who have received credit for ELEC 6161 may not take this course for credit.

ENCS 6181 Optimization Techniques I (*)(4 credits)
The optimization problem; classical optimization; one dimensional search techniques; unconstrained gradient techniques; quadratically convergent minimization algorithms; constrained optimization; constrained gradient techniques; penalty-function methods; applications. *Prerequisite:* ENCS 6101 or equivalent.

ENCS 6191 Fuzzy Sets and Fuzzy Logic (4 credits)
Fuzzy sets, operations on fuzzy sets, fuzzy relations; fuzzy logic: connectives, implication functions, representation of fuzzy rules and fuzzy logic based reasoning; fuzzy logic in planning and control: Zadeh's Generalized Modus Ponens type reasoning, Mamdani type reasoning, fuzzy clustering based system identification and Sugeno type reasoning; case studies.

ENCS 6811 Optical Networking: Architectures and Protocols (4 credits)
This course introduces advanced concepts and protocols of modern telecommunication networks based on Photonic technology. The basics of optical communications networks will be introduced, including the enabling technology, and the main emphasis will be on network architectures and associated protocols. This includes: orientation of transport networks and their evolution (Ring and Mesh topologies); Wavelength Division Multiplexing (WDM); wavelength-routed networks; wavelength conversion; lightpath routing protocols (static, dynamic, adaptive routing and traffic grooming) and optimization problems; control and management protocols and distributed provisioning; survivable network design (proactive and reactive); fault-management and various network restoration protocols; convergence of optical networks and the Internet (IP/WDM) and Generalized Multi Protocol Label Switching (G-MPLS). There will be various assignments in which students will

be involved in research projects. Knowledge of telecommunication systems and a background in network simulation is needed. Project.

ENCS 8011 Ph.D. Seminar (2 credits)
The Ph.D. Seminar is designed to train students to communicate the results of their research projects to the community and participate in research discussions. This is done when the students have sufficiently progressed into their research, normally after 6 (12 for part-time students) months of being admitted to candidacy, which is normally after 24 (48 for part-time students) months of residency, and must be completed before the submission of the thesis. The student's evaluation, reflected by either a pass or fail grade, is based upon attendance in all seminars, a report on the student's thesis research under the direction of the thesis supervisor(s), and a presentation. *Prerequisite:* ENCS 8511 Doctoral Research Proposal.
Note: Students who have completed ENCS 8011 prior to September 2005 may not take this Seminar for credit.

ENCS 8501 Comprehensive Examination (No credit value)
See Note on page 377.

ENCS 8511 Doctoral Research Proposal (6 credits)
The goal of the doctoral research proposal is to focus the student's Ph.D. research. The proposal must include an extensive critical review of previous work on the subject of the thesis, and a detailed research plan of action and expected milestones. Students are required to defend their doctoral research proposal before a committee that will normally be comprised of the same members as the comprehensive examination committee.
Note: Students admitted prior to September 1997 are not allowed to substitute ENCS 8511 for an equivalent course work.

ENGR 6101 Physical Systems (3 credits)
A study of modelling and analysis of physical systems with emphasis on similarities of systems in various media; dynamic system elements; generalized dynamic elements; formulation of system equations and transfer functions using matrices; signal flow graph theory; analog simulation; transient and steady state solutions; frequency response analysis; stability studies.

ENGR 6131 Linear Systems (*) (4 credits)
State-space representation of dynamic systems, canonical realizations, solutions, modal decomposition, stability. Controllability and observability, minimal realizations, state feedback, pole placement, observers, observer-based controllers. Introduction to optimal control, linear quadratic regulator, the Kalman filter. Limitation on performance of control systems, introduction to robustness. *Prerequisite:* ENGR 6101 or equivalent.

ENGR 6141 Nonlinear Systems (4 credits)
Dynamic systems: definitions and notations; nonlinear differential equations; Lipschitz continuity; linearization; describing functions; phase plane analysis; Lyapunov stability; Popov and circle criteria; limit cycles. *Prerequisite:* ENGR 6131.

ENGR 6161 Sensors and Actuators (4 credits)
Elements of smart sensors and systems and their structures; properties of various smart materials including piezoelectric, pyroelectric, shape memory alloys, Rheological fluids, piezoresistive and magnetostrictive; physical and mathematical basis of smart materials; characterization of smart multi-functional materials; sensors and actuators in mechatronics; design and fabrication of sensors and actuators by micromachining; survey of classical system theory; design of sensors and actuators for applications in industrial and medical robotics, haptics, and other systems such as aerospace and smart structures. The students are required to undertake a project work involving design of smart sensors/actuators for specific applications.

ENGR 6191 Introduction to Biomedical Engineering (4 credits)
The origin and characteristics of biological potentials: nerve, muscle, heart, brain; the measurement of biological events; instrumentation systems: electrical safety, biomechanics, biomaterials, orthopaedic engineering; biomedical engineering applications/implications in industry. Project on a current topic.

ENGR 6201 Fluid Mechanics (4 credits)
Fundamental concepts of fluid mechanics; transport phenomena; stress-strain relation; equations of motion; exact solutions; dynamic similarity; specialized equations; laminar boundary layers; flow over immersed bodies; introduction to turbulent flow. *Prerequisite:* ENCS 6011 or equivalent.

ENGR 6211 Similarity and Modelling in Engineering Systems (4 credits)
Introduction, including dimensional analysis and the π-theorem, fractional analysis, differential equation methods and similarity transformations. The model concept and approximate and partial modelling principles, experimental design and empirical correlations. Application to heat and mass transfer, fluid dynamics, mechanics of deformable bodies and chemical reactions.

ENGR 6241 Hydrodynamics (4 credits)
Fundamental concepts of ideal flow; irrotational flow patterns; kinematics of flow; potential theory; standard flow patterns; conformal transformation; Cauchy-Riemann condition; complex operator; simple engineering applications. *Prerequisite:* ENGR 6201.

ENGR 6251 The Finite Difference Method in Computational Fluid Dynamics (4 credits)
Classification of second order partial differential equations, boundary conditions. Finite difference discretization of equations, truncation error, explicit and implicit formulations. Numerical stability, consistency and convergence. Time dependent (parabolic) equations, explicit and implicit discretization, stability, convergence. Steady state (elliptic) equations, explicit and implicit discretization, iterative and direct solution methods. Hyperbolic equations. Formulation of flow problems and applications to incompressible, compressible and transonic inviscid and viscous flows are interspersed throughout the course. *Prerequisite:* ENGR 6201.

ENGR 6261 The Finite Element Method in Computational Fluid Dynamics (4 credits)
Classification of second order partial differential equations, boundary conditions. The finite element method, simple examples, assembly rules, solution of linear systems of equations. Forming the modules of a general FEM computer code. The variational approach, variational principles and stationary functions. Elements and interpolation functions. The weighted residual approach Rayleigh-Ritz, least squares, subdomain and collocation, weak Galerkin formulation. Formulation of flow problems and applications to incompressible, compressible and transonic inviscid and viscous flows are interspersed throughout the course. *Prerequisite:* ENGR 6201.

ENGR 6271 Finite Volume Methods in Computational Fluid Dynamics (4 credits)
Formulation, analysis and implementation of finite volume methods; spatial discretization on structured and unstructured grids; applications to compressible inviscid and viscous flows; advanced topics in upwind schemes, multigrid methods, and parallel computing. The course comprises project work that would involve development of a grid generation code, an inviscid flow solver, and a viscous flow solver. *Prerequisites:* ENGR 6201 or equivalent.

ENGR 6291 Rheology (4 credits)
Viscoelasticity, standard flows and material functions, relationships between material functions, generalized Newtonian fluid, the Maxwell model, finite linear viscoelasticity, continuum constitutive equations, effects of material, temperature and pressure on viscoelasticity behaviour, rheometry issues in viscoelastic flow simulations, industrial applications of rheology. A project.
Note: Basic understanding of fluid mechanics is required.

ENGR 6301 Advanced Dynamics (4 credits)
Dynamics of rigid bodies; generalized coordinates; D'Alembert's principle; Lagrange's equations; energy methods, Hamilton's theory; Euler- Lagrange equations; variational principle of mechanics. Phase space canonical

transformation. Language multipliers methods. Hamilton-Jacobe equation. *Prerequisite:* ENCS 6011 or equivalent.

ENGR 6311 Vibrations in Machines and Structures (*) (4 credits)
Vibrations of discrete systems: Single-Degree of Freedom (SDOF) and Multi-Degree of Freedom (MDOF) systems; continuous systems: bars, beams, membranes and plates with various boundary conditions; mode superposition; energy methods; Rayleigh-Ritz Method; condensation techniques; applications to machine components, rotor bearing systems, vehicle and aerospace structures. Project on selected topics is an integral part of the course. *Prerequisite:* ENGR 6101 or equivalent.

ENGR 6411 Robotic Manipulators I: Mechanics (*) (4 credits)
Types of industrial robots and their applications. Mathematical analysis for robot manipulation: homogeneous transformations; definition and solution of kinematic equations governing the position and orientation of the hand. Force analysis and static accuracy; forces and moments of inertia, dynamic equation of equilibrium, differential equations of motion of robotic arms. Robotic actuators. *Prerequisite:* ENCS 6011 or equivalent.

ENGR 6421 Standards, Regulations and Certification (4 credits)
Overview of DoT and other international (FAA, etc.) aviation standards, regulations and certification procedures; regulatory areas, namely, pilot training/testing, air traffic procedures, aircraft systems design and airworthiness; development process for new regulations and criteria for certification.

ENGR 6441 Materials Engineering for Aerospace (4 credits)
Fundamentals of materials engineering and processing with special emphasis on aerospace engineering materials and protection against failure; microstructures, phase equilibria for aerospace materials, dislocations, deformation, strain hardening and annealing, recovery, recrystallization; hot and cold metal forming (aircraft fabrication), solidification, castings (process and defects); welding and non-destructive testing, solid solution and dispersion strengthening; ferrous alloys and super alloys, light alloys (AL, MG, TI), ceramic materials, polymers, composite materials (polymer matrix/metal matrix); corrosion, fatigue and creep failure; fracture and wear.

ENGR 6461 Avionic Navigation Systems (4 credits)
Introduction: history of air navigation; earth coordinate and mapping systems; international navigation standards; airspace and air traffic control structure; basics of flight instruments and flight controls; fundamental concepts of navigation. Classification of modern avionic navigation systems. Basics of air traffic communication: radio wave propagation; VHF and HF systems. Short range, long range, approach/terminal area avionic navigation systems and radar systems: principles; design; advantages/ disadvantages; errors; impact of

global positioning system and future trends. Introduction to advanced integrated avionic systems. Projects on selected topics.

ENGR 6501 Applied Elasticity (4 credits)
Plane stress and strain; analysis of stress and strain in three dimensions; Airy's stress function; solution of two-dimensional problems by polynomials and Fourier series; effect of small holes in bars and plates; torsion and bending of prismatic bars; Membrane analogy; thermoelasticity; rectangular, circular, ring-shaped flat plates; applications in civil and mechanical engineering. *Prerequisite:* ENCS 6011 or equivalent.

ENGR 6511 Matrix Analysis of Structures (*) (4 credits)
Analysis of statically loaded framed structures by matrix methods; energy concepts in matrix form; transformation of information in structures; flexibility and stiffness methods; computer applications. *Prerequisite:* ENCS 6011 or equivalent.

ENGR 6531 The Finite Element Method in Structural Mechanics (4 credits)
Displacement analysis of structures; finite elements of a continuum; applications of the method to stress analysis of two- and three-dimensional structures; stability problems; vibrations and heat transfer; digital computer applications. *Prerequisite:* ENGR 6511.

ENGR 6541 Structural Dynamics (4 credits)
Dynamic behaviour of structures; lumping of masses; motion of elastic framed structures caused by arbitrary disturbances; analytical and numerical methods of solution; approximate determinations of natural frequencies in elastic systems; dynamic response of framed structures in the inelastic range; continuous systems, introduction to approximate design methods. *Prerequisite:* ENGR 6511.

ENGR 6551 Theory of Elastic and Inelastic Stability (4 credits)
Analysis of elastic and inelastic stability of columns; frame buckling; beam-columns, strength of plates, shear webs and shells; torsiona; flexural buckling of thin-walled, open sections; snap-through; critical discussion of current design specifications; applications to structures. *Prerequisite:* ENCS 6011 or equivalent.

ENGR 6561 Theory of Plates and Shells (4 credits)
Analysis of deformation and stress in plates and flat slabs under transverse loads; various boundary conditions; numerical methods; membrane stresses and displacements in shells under various loading; bending theory of shells; limit analysis of rotationally symmetric plates and shells; applications to shell type structures such as folded plate structures; sandwich plates; shell roofs and pressure vessels. *Prerequisite:* ENCS 6011 or equivalent.

ENGR 6571 Energy Methods in Structural Mechanics (4 credits)
Principles of virtual work, total potential and complementary energy. Reisner's Principle. Introduction to calculus of variations. Ritz and Galerkin's methods. Applications to frame, plate and shell structures. *Prerequisite:* ENGR 6511.

ENGR 6581 Introduction to Structural Dynamics (*) (4 credits)
Theory of vibrations. Dynamic response of simple structural systems. Effects of blast, wind, traffic and machinery vibrations. Basic concepts in earthquake resistant design. Computer applications.

ENGR 6601 Principles of Solar Engineering (4 credits)
Magnitude and availability of the solar energy input, including seasonal and diurnal variations of direct beam radiation; spectral distribution of sunlight; scattering and absorption processes; diffuse radiation; influence of cloud cover. Magnitude and time variation of typical loads, including space heating and cooling water heating; dehumidification. Principles of passive and active methods of solar collection, thermal conversion, and energy storage. Analysis of systems and components, including treatment of thermal and turbulent losses; efficiency calculations; electrical analogies; impedance matching and system optimization. Economics of systems. *Prerequisite:* BLDG 6541.

ENGR 6611 Equipment Design for Solar Energy Conversion (4 credits)
This course emphasizes the mechanical design of solar heating and cooling systems and consists of the following topics: thermodynamic analysis of radiation, collection and conversion of solar energy, selection and manufacturing of components such as collectors, piping, line insulation, heat exchangers, etc., solar cooling and dehumidification, control of solar energy systems, case studies and project experiences. *Prerequisite:* ENGR 6201.

ENGR 6661 Solar Energy Materials Science (4 credits)
The place of organisms and materials in the solar energy cycle; physical, chemical and optical phenomena. Selective absorbers: surfaces and films, emissivity, thermal conversion, role of crystal defects and phase interfaces in metals and semiconductors. Reflector characteristics and damage modes. Optical and mechanical properties of glass, polymer and composite windows. Photovoltaic: physics and materials. Chemical, thermal and photo stability. Thermal transfer and storage media: gaseous, aqueous, organic; phase change and particulate systems; stability and corrosive effects.

ENGR 6811 Energy Resources: Conventional and Renewable (4 credits)
Depletion of conventional energy sources. Emission of greenhouse gases from conventional power production systems. Principles of renewable energy systems; cogeneration of electrical and thermal energy, photovoltaic systems, wind power, fuel cells, hybrid systems. Hydrogen and other forms of energy storage for renewable power production. Integrated and small-scale renewable energy systems; independent versus grid-connected systems.

ENGR 691 Topics in Engineering I (4 credits)
See Note on page 427.

ENGR 6951 Seminar on Space Studies (4 credits)
Introduction to the science and technology of spaceflight; remote sensing; human factors in space; automation and robotics; space law; space transportation systems; the space station; the Moon-Mars initiative; space utilization; interplanetary travel. *Prerequisite:* Permission of Instructor.

ENGR 6971 Project and Report I (4 credits)
See page 381.

ENGR 6981 Project and Report II (4 credits)
See page 382.

ENGR 6991 Project and Report III (5 credits)
See page 382.

ENGR 797 Project and Report I (3 credits)*

ENGR 798 Project and Report II (3 credits)*

ENGR 799 Project and Report III (3 credits)*
* for students registered in the M.Eng. Program prior to June 2001.

ENGR 7011 Graduate Seminar in Mechanical and Industrial Engineering
(1 credit)

ENGR 7121 Analysis and Design of Linear Multivariable Systems
(4 credits)
Representation of linear multivariable systems. Controllability, observability and canonical forms; poles and zeroes; multivariable system inverses; the linear quadratic regulator problem; the robust servomechanism problem; the minimal design problem; frequency-domain design techniques. *Prerequisite:* ENGR 6131.

ENGR 7131 Adaptive Control (4 credits)
Real-time parameter estimation; least-squares and regression models; recursive estimators; model reference adaptive systems (MRAS); MRAS based on gradient approach and stability theory; self-tuning regulators (STR); adaptive prediction and control; stability and convergence results, robustness issues; auto-tuning and gain scheduling; alternatives to adaptive control; practical aspects; implementation and applications. *Prerequisite:* ELEC, 6061, ENGR 6131.

ENGR 7181 Digital Control of Dynamics Systems (4 credits)
Review of discrete-time and sampled-data systems; discrete input-output and state-space equivalents; controllability and observability of sampled-data

systems; controller design using transform techniques, design using state-space methods; generalized sample-data hold functions; optimal control; quantization effects; multirate sampling; robust control; discrete-time non-linear systems; discrete-time multivariable systems. *Prerequisites:* ELEC 6061, ENGR 6131.
Note: Students who have received credit ENGR 6181 may not take this course for credit.

ENGR 7201 Microgravity Fluid Dynamics (4 credits)
Forces and accelerations in space environment; zero-gravity simulation, free falling capsules, flights in Keplerian trajectories, sounding rockets, and the space station; surface tension; main non-dimensional parameters; Laplace-Young equation; contact angle; Dupre's equation; Neumann's triangle; minimization principle associated with Laplace's equation; equilibrium shapes of a liquid, small oscillations of ideal and viscous fluids, liquid handling problems at low gravity, liquid positioning and control, vortexing capillary; numerical simulations of liquid dynamics in microgravity environment. *Prerequisite:* ENGR 6201.

ENGR 7331 Random Vibrations (4 credits)
Mathematical descriptions of stochastic processes; spectral density and correlation functions; Gaussian and non-Gaussian random processes; Markov processes and Fokker/Planck equation; response of linear and nonlinear oscillatory systems to random excitation; non-stationary and narrow-band random processes. *Prerequisite:* ENGR 6311.

ENGR 7401 Robotic Manipulators II: Control (4 credits)
Control of a single link manipulator; position, velocity and acceleration errors; control of a multiple link manipulator sensor: vision, proximity, touch, slip, force, compliance and force controlled robots. Computer control of robots, command languages. Introduction to intelligent robots. *Prerequisite:* ENGR 6411.

ENGR 7461 Avionic Systems Design (4 credits)
Definitions, purpose, history and evolution of avionic systems; cockpit displays configurations, classifications, and design considerations; ARINC communication bus system standards; air data computer system; navigation systems; automatic flight control systems; monitoring/warning/alert systems; flight management systems; system integration; advanced concepts and future trends. Projects on selected topics. *Prerequisite:* ENGR 6461.

ENGR 7521 Advanced Matrix Analysis of Structures (4 credits)
Displacement method for two- and three-dimensional analysis of structures. Nonlinear large displacement analysis by stiffness method. Matrix formulations of vibration and stability problems. Computer applications. *Prerequisite:* ENGR 6511.

ENGR 7531 Boundary Element Method in Applied Mechanics (4 credits)
Boundary integral formulations of Axi-Symmetric, two- and three-dimensional potential and elastostatic problems. Treatment of thermal effects, singularity elements, infinite boundary elements. Coupling of boundary elements and finite elements. Introduction to non-linear, elastostatic problems. Numerical implementation.

ENGR 791 Topics in Engineering II
See Note on page 427.

ENGR 7961 Industrial *"Stage"* and Training (6 credits)
This is an integral component of the aerospace program and the composites option in the Mechanical Engineering program that is to be completed under the supervision of an experienced engineer in the facilities of a participating company. The topic is to be decided by a mutual agreement between the student, the participating company and the program director. The course is graded on the basis of the student's performance during the work period, which includes a technical report. *Prerequisite:* Completion of at least twelve credits in the composite option and at least twenty-one credits in the aerospace program or permission of program director.

ENGR 8091 Master of Applied Science Research and Thesis (29 credits)
See page 381

ENGR 8911 Doctoral Research and Thesis (70 credits)
See page 378.

Course Descriptions - Information Systems Engineering

INSE 6100 Advanced Java Platforms (4 credits)
This course emphasizes the architecture and the inner workings of the Java virtual machine; 3 distributions of the Java Platform: the micro-addition, the standard addition and the enterprise addition; the JCP process and the Java standards purposed as API extensions; semantic foundations of Java: static semantics and dynamic semantics. Introduction of technologies that are used to accelerate (performance analysis, hardware accelerators, ahead-of-time, just-in-time, selected dynamic compilation and component-based acceleration) and secure (virtual machines, such as vulnerability analysis, Java security models, byte-code verification, access controllers, security managers, policy files, and certified compilation) Java. Semantic correctness of acceleration and security techniques will also be addressed. A project. *Prerequisite:* Permission of the CIISE is required.

INSE 6110 Foundations of Cryptography (4 credits)
Cryptography and cryptanalysis, mathematical background: complexity theory, number theory, abstract algebra, finite fields, number-theoretic reference problems, the integer factorization problem, the RSA problem, the

quadratic residuosity problem, computing square roots in Zn, the discrete logarithmic problem, the diffie-hellman problem, pseudorandom bits and sequences, stream ciphers: feedback shift registers, LFSRs, RC4. Block Ciphers: SPN and Fiestel structures, DES, AES, linear cryptanalysis, differential cryptanalysis, side channel attacks, public key encryption: RSA, Rabin, ElGamal, McEliece, elliptic curves cryptography, hash functions: Un-keyed hash functions, MACs, Attacks, Digital signatures: RSA, Fiat-Shamir, DSA, public key infrastructure, key management, efficient implementation of ciphers. A project.

INSE 6120 Crypto-Protocol and Network Security (4 credits)
Cryptographic protocols, authentication protocols, key distributions protocols, e-commerce security protocols, security protocol properties: authentication, secrecy, integrity, availability, non-repudiation, atomicity, certified delivery, crypto-protocol attacks, security protocols design, implementation and analysis. OSI security architecture, models and architectures for network security, authentication using Kerberos and X.509, email security (PGP, S/MIME), IP security, IPv6, web security, SSL/TLS, virtual private networks, firewalls (screening routers, packet filtering, firewall architecture and theory, implementations and maintenance, proxy servers), content filtering, denial of service attacks, wireless networks security, network security policies, intrusion detection, host-based IDS, network based IDS, misuse detection methods, anomaly detection methods, intrusion detection in distributed systems, intrusion detection in wireless ad hoc networks. A project. *Prerequisite:* INSE 6110 or equivalent.

INSE 6130 Operating Systems Security (4 credits)
System security, MS windows security, linux security, unix security, embedded and real-time OS, system reliability, OS security mechanisms, security administration, delegation of authority, group policy design, security configuration, password requirements, security services, protection models, protection levels, protection domains, capabilities, sharing, system kernel security, resource control, secure booting, firewalls and border security, security models and policies, security levels, authentication, confidentiality, integrity, access control strategies access matrix, access control list, mandatory, discretionary, monitoring, auditing, accountability, privilege, account security, file system protection, registry security, threat analysis, security attacks, security-hardened operating. A project.

INSE 6140 Middleware and Application Security (4 credits)
Malicious code, taxonomy, viruses, worms, trojan horses, logical and temporal bombs, infection process, security properties of applications, safety, high level security, detection approaches, ad hoc techniques: scanning, anti-virus technology, obfuscation, dynamic analysis for security: passive and active monitoring, in-line and reference monitors, sandboxing, static analysis for security: data and control flow analysis for security, type-based analysis for

security, self-certified code: certifying compilers, proof carrying code, efficient code certification, typed assembly languages, certificate generation, certificate verification and validation, C and C++ security, java security, byte-code verification, access controllers, security managers, permission files, security APIs, critical APIs, protection domains, security profiles, mobile code security. A project.

INSE 6150 Security Evaluation Methodologies (4 credits)
Security evaluation of information systems, security evaluation of software, security evaluation of products. Security code inspection, security testing, security standards, preparation of a security evaluation: impact scale, likelihood scale, severity scale. Vulnerability analysis, risk analysis, security plan elaboration. ITSEC, MARION, and MEHARI methods, OCTAVE, common criteria, target of evaluation, protection profile, security functional requirement, security factors, errors, accidents, assurance requirements, assurance levels, evaluation process, compliance with the protection profile, IT security ethics, privacy, digital copyright, licensing IT security products, import and export control regulations, computer fraud and abuse, computer crime control, national and international criminal codes, incident handling, infrastructure protection and espionage laws, privacy laws, business records, security forensics, security evaluation case studies. A project.

INSE 6210 Total Quality Methodologies in Engineering (4 credits)
Methodologies for quality engineering: six sigma, ACE (Achieving Competitive Excellence), Lean engineering, ISO9000 series; comparative study, quality clinic process charts, relentless root cause analysis, mistake proofing, market feedback analysis, process improvement and waste elimination, visual control, standard work and process management, process certification, setup reduction, total productive maintenance, DMAIC and DMADV processes, define phase, project charter, project scoping and planning, measure phase, critical to quality requirements, quality functional deployment, analyze phase, functional and process requirements, design requirements, design concepts, high-level design capability elaboration and evaluation, design phase, detailed design capability elaboration and evaluation, failure mode and effects analysis, control and verification plans, verify phase, pilot-scale processes, pilot testing and evaluation, implementation planning, full-scale processes, start-up and testing, performance evaluation, turnover to operations and maintenance, transition to process management, project closure. A project.

INSE 6220 Advanced Statistical Approaches to Quality (4 credits)
Introduction to quality control and total quality, statistical concepts and techniques in quality control, graphical methods for data presentation and quality improvement, statistical basis for control charts, pattern analysis in control charts, control charts for variables, control charts for individual measurements, control charts for attributes, process capability analysis, CUSUM charts and EWMA charts, acceptance sampling by attributes,

acceptance plans by variables, reliability models, reliability and life testing plans, multivariate quality control, multivariate methods, aspects of multivariate analysis, multivariate normal distribution, multivariate tests of hypotheses, multivariate analysis of variance, principal components analysis, factor analysis, discrimination and classification, multivariate quality control, multivariate linear regression, design of experiments (DOE), Taguchi method, completely randomized design (CRD), randomized complete block design (RCBD), incomplete block designs, latin square designs, graeco-latin square designs, factorial designs, fractional factorial designs, split plot designs, and nested designs (compared to cross-over designs), quality in the service sector, service industries and their characteristics, model for service quality and applications. A project.

INSE 6230 Total Quality Project Management (4 credits)
Role of a project manager, learning and applications, project management processes, project management in quality initiatives, intellectual property protection, customer project management and critical-to-quality requirements, project planning and execution, team formation, goals, roles, procedures and interpersonal relationship, types of teams, creating a project plan, project tracking, project compliance requirements, sourcing and supplier qualification, government contract data rights, government property, risk management process, action planning, project communication, customer, team and stakeholder communications, communication planning and strategy, web-based collaboration, project management software tools. A project.

INSE 6240 Executive Communication (0 credits)
Communication plan elaboration, preparing a presentation, developing a sound strategy, organizing for effectiveness, capturing the audience, the impromptu speech, introducing a speaker, reading a paper, leading a conference, interpersonal communication, use of voice, active listening, assertive speaking, giving and receiving feedback, assertive techniques, work styles, conflict and dispute resolution, negotiation, managing difficult situations, writing skills, interpersonal communications, business letters, formal reports, communication technology. A project.

INSE 6250 Quality Methodologies for Software (4 credits)
Quality methodologies for software, calculating sigma values, graphical analysis, quality processes for software, MAIC, DMADV, define overview, project context, initial analysis and design, lifecycle and multi-generational planning, project management, risk analysis, measure overview, customer needs, quality functional deployment for software, software metrics and requirements, scorecards, meta-models, specification languages (SDL, B, Z, etc.), software modeling (UML, Core, IDEF, etc.), graphical languages, design and verify overview, failure mode and effect analysis for software, defensive programming, smart and simple design, peer reviews, performance analysis,

statistical tools, software testing, software verification. A project. *Prerequisite:* INSE 6210 or equivalent, COMP 5541 or equivalent.

INSE 6260 Software Quality Assurance (4 credits)
Quality assurance, quality factors, components of a software quality assurance system, contract review, software development and quality plans, activities and alternatives, integration of quality activities in a project lifecycle, reviews, software inspection, software verification, testing processes, static analysis, control-flow analysis, data-flow analysis, control-flow testing, loop testing, data-flow testing, transaction-flow testing, domain testing, type-based analysis, dynamic analysis, usage models, operational profiles, result and defect analysis, reliability, performance analysis, maintenance and reverse engineering, case tools and software quality assurance. A project. *Prerequisite*: INSE 6210 or equivalent, COMP 5541 or equivalent.

INSE 6270 Quality-Based System Engineering (4 credits)
System engineering, quality-based system development process, acquisition and specification of system requirements, system design and prototyping, system implementation and testing, modeling languages for system engineering (SysML, IDEF, CORE, etc.), exchange mechanisms for system engineering data (AP233, XMI, etc.) gathering, specification, formulation, and refinement of system requirements, customer requirements, market requirements, technical requirements, implementation requirements, eco-requirements (scenario-based requirements gathering and refinement, affinity diagram, analytic hierarchy analysis), conflict resolution (TRIZ), management of system requirements in the design process (axiomatic design, decision tree, morphology matrix, systematic design), management of system requirements in the implementation process (six-sigma, ACE, Lean, ISO 9000, ERP, SAP, CMMS), case studies. *Prerequisite:* INSE 6210 or equivalent.

INSE 6280 Quality Assurance for System Engineering (4 credits)
Introduction to quality assurance and quality factors in systems engineering, components of a quality assurance system, principles of verification, validation and accreditation of systems, Vvsystem modeling languages, model semantics, techniques for V principles of system simulation (types of problems, simulation systems and their classification, principles of simulation system design and implementation), verification and validation techniques for simulation models (problem entity, conceptual model, and computerized model), development of simulation platforms, standards for system simulation, high level architecture (HLA). A project. *Prerequisite:* INSE 6210 or equivalent.

INSE 6290 Quality in Logistics and Supply Chain Management (4 credits)
Evolution of logistics, logistics (lingo, notation, master planning, role in business, performance analysis, activity profiling), total logistics cost profile, perfect order percentage, inventory turns, fill rates and substitutions, purchase and customer order cycle times, total quality logistics, logistics productivity

measures, gap analysis, logistics project justification, benchmarking, customer service and order processing (CSinventory planning and management) 1P supply chain engineering and management, the supply chain scoreboard, make, buy, and sourcing analysis, manufacturing logistics, procurement logistics, supplier partnerships, global sourcing active assembly, supply chain management systems, efficient transportation, efficient warehousing, logistics information systems, logistics organization design, international logistics, logistics case studies, logistics trends. A project.

INSE 6300 Quality Assurance in Supply Chain Management (4 credits)
Supply chain management, definition, models, evolution and evaluation, quality attributes, evaluation criteria, impact of e-commerce on supply chains, key supply chain management issues, inventory reduction, strategic partnerships, information technology, supply chain cost reduction opportunities, global supply chains, logistics, information technology and decision support systems, management of the supply chain, customer demands analysis, sales and operating planning hierarchy, gathering data required for sales and operation planning, inventory management techniques, strategic sourcing, techniques to reduce new product development efforts, effective supply chain management, supply and demand synchronization, aligning customer demands to order fulfillment, minimizing the bullwhip effect, management of supply chain constraints, supply chain performance measurements, supply chain Information, communication, and security, information flows, e-business strategies, e-business transactions, security measures, to e-commerce platforms for supply chain. A project.

INSE 6311 Sustainable Infrastructure Planning and Management Systems (4 credits)
This multi-disciplinary course will provide the basic knowledge for developing advanced information systems that can be used to systematically plan and manage infrastructure (e.g. roads and bridges) throughout its lifecycle, including environmental impact assessment. The course will cover the following topics: Definition and history of Infrastructure, Types and functions of Infrastructure, Infrastructure Planning, Performance Modeling, Failure Analysis and Reliability Issues, Infrastructure Inspection and Monitoring, Maintenance and Rehabilitation Strategies, Environmental Management and Sustainability Issues, and Integrated Infrastructure Management Systems. Projects.

INSE 6411 Product Design Theory and Methodology (4 credits)
This course introduces main design theories and methodologies for the conceptual and configuration design of mechanical/manufacturing systems. It includes the following topics: general design process; introduction to design theory and methodologies; user requirements analysis; structure of design problem; design concept and product configuration generation methods; evaluation of design concepts and product configuration; sources and resolution

strategies of design conflicts; computer-assistance of all these tasks; and case studies of product design. Project.

INSE 6510 Video Game Technology and Development (4 credits)
This course is part development and part technology, and will cover the process of commercial video game development, and software design patterns used for game design. The course provides an in-depth understanding of how the game design process works. Students work with a game engine software framework to design and implement several kinds of games. Video game history. Basic Building blocks of a game. Elements of game design. Game Maker: objects, sprites, events. Space Shooter. Developing games with Games Factory. Real Time Strategy game development. A project. *Prerequisite:* COMP 5511 or equivalent, previously or concurrently.

INSE 6530 3D Graphics and Computer Animation for Game Design (4 credits)
Application of 3D graphics and animation topics to non real-time rendered media. Current research topics in computer animation such as dynamic simulation of flexible and rigid objects, automatically-generated control systems, and evolution of behaviours. History of Animation. Animation Basics. Keyframe Animation. Path Animation. Non-Linear Animation. Modeling Concerns for Animation. Rigging for Forward and Inverse Kinematics. Morphing. Expressions. Particle Systems. Dynamics. A project. *Prerequisite*: COMP 6761 or equivalent, previously or concurrently.

INSE 691 Topics in Information Systems Engineering (4 credits)
Note: Subject will vary from term to term and from year to year. Students may re-register for these courses providing that the course content has changed. Changes in content will be indicated by the letter following the course number, e.g., INSE 691A, INSE 691B, etc.

INSE 7100 Design and Analysis of Security Protocols (4 credits)
The primary objective of this course is to present the methods used in the design and analysis of modern security protocols, introduction to existing cryptographic protocols. The most important security proprieties (such as authentication, secrecy, integrity, availability, atomicity, certified delivery and other properties), flaw taxonomy (such as freshness attacks, type attacks, parallel session attacks, implementation dependent attacks, binding attacks, encapsulation attacks and other forms of attack). Cryptographic protocol specification (general-purpose formal languages, logical languages, operational languages and security calculi). Cryptographic protocol analysis (security logics analysis, model-based and algebraic analysis, process algebra analysis, type based analysis). Limitations of formal methods and ad-hoc techniques, project will be offered in analyzing a number of published cryptographic protocols. The focus of this course will be on the design and the analysis of security protocols. *Prerequisite:* COEN 6311 or equivalent.

INSE 7110 Value Added Service Engineering in Next Generation Networks (4 credits)
Telecommunications service engineering, or more simply service engineering, is the discipline that addresses the technologies and engineering process for the specification, implementation, testing, deployment, usage of value added services in telecommunication networks, value added services, or more simply services, can be defined as anything that goes beyond two party voice calls. They are either call related (e.g. call diversion, multiparty gaming, conducted conferences) or non-call related (e.g. customized stock quotes, web surfing from a cellular phone). Some services may combine call related and non-call related features (e.g. call centres). This course will cover the basics of service engineering (such as basic concepts, value added services, service life cycle, service engineering, intelligent networks, WAP/Imode/TINE-C). The basics of next generation networks (such as session initiation protocol (SIP), H.323, Megaco, H.248, 3GPP/3GPP2 architecture, softswitch). Signaling protocol – specific approaches (such as H.232 supplementary services, SIP CGI, SIP servlet API). Signaling protocol neutral approaches (such as CPL, JAIN JCC/JCAT, PARLAY; web services). Approaches at the research stage (such as context awareness; mobile code-based approaches). *Prerequisite:* ELEC 6861 or equivalent.

INSE 7120 Advanced Network Management (4 credits)
Network management – basics (history and basic definitions, management frameworks, functional areas). The simple network management protocol framework (history, protocol architecture, functional architecture, information architecture, RMON, management by delegation, distributed management and JASMIN NIB, case studies). OSI systems management, TNM and other frameworks (OSI communication, information and functional models, TMN functional, physical and information architecture, case study, CORBA based management, web based management, DTMF, JMX). Interoperability issue and in-depth study of a specific functional area overview of known techniques (e.g. dual MIBs), alarm filtering techniques (e.g. artificial intelligence), alarm correlation techniques (e.g. artificial intelligence, coding theory). Approaches still a research level (mobile agent based network management, active network based network management, policy based artwork management, use of SML/web services. *Prerequisite:* ELEC 6861 or equivalent.

INSE 8901 Master of Applied Science Research and Thesis (25 credits)
Students must complete a 25-credit thesis as part of their degree requirements. The thesis must represent the results of the student's independent work after admission to the program. The proposed topic for the thesis, together with a brief statement outlining the proposed method of treatment, and the arrangement made for faculty supervision, must be approved by the Faculty Graduate Studies Committee. For purposes of registration, this work will be designated as INSE 8901. the thesis will be evaluated by the student's

supervisor(s), and at least two examiners appointed by the Faculty Graduate Studies Committee, one of whom shall be external to the student's department.

Course Descriptions – Mechanical and Industrial Engineering

INDU 691 Topics in Industrial Engineering (4 credits)
Note: Subject matter will very from term to term and from year to year. Students may re-register for these courses provided that the course content has changed. Changes in content will be indicated by the letter following the course number, e.g. INDU 691A, INDU 691B, etc.

INDU 6111 Theory of Operations Research (4 credits)
Linear programming: examples of linear programming problems; simplex algorithm; degeneracy; cycling and Bland anti-cycling rules; revised simplex method; duality; dual simplex method; sensitivity analysis; primal-dual method; network optimization: the trans-shipment problem and the network simplex method; transportation and optimal assignment problems.
Note: Students who have taken ENCS 6151 may not receive credit for this course.

INDU 6121 Advanced Operations Research (*) (4 credits)
Mathematical modeling of industrial systems, including manufacturing and service systems, using integer programming (IP), network analysis, dynamic programming, non-linear programming and other optimization models. Introduction to stochastic optimization models. Traditional and advanced techniques to solve those models and industrial problems. Enumerative algorithms for solving IP and dynamic programming problems, post-optimality analysis. Applications in the design and operation of industrial systems. Design project.
Note: Students who have taken ENCS 6211 may not receive credit for this course.

INDU 6131 Graph Theory with System Applications (4 credits)
Basic concepts; trees, circuits and cutsets; Eulerian and Hamiltonian graphs; directed graphs; matrices of a graph, graphs and vector spaces; planarity and duality; connectivity, matching and colouring; flows in networks: max-flow min-cut theorem, minimum cost flows; optimization on graphs: minimum-cost spanning trees, optimum branching and shortest paths.
Note: Students who have taken ENGR 6111 may not receive credit for this course.

INDU 6211 Production Systems and Inventory Control (4 credits)
Integrated production planning and control. Large scale model development for demand forecasting, materials requirements planning and manufacturing resource planning (MRP/MRPII), production-inventory systems, production planning; models for line balancing, lot sizing, dispatching, scheduling,

releasing. Models for inventory control, determination of order quantities and safety stocks, inventory replenishment systems. Supply chain management. Just-in-Time systems, lean and Agile manufacturing. A project is required.

INDU 6231 Scheduling Theory (4 credits)
Models for sequencing and scheduling activities including: static and dynamic problems; deterministic and stochastic models. Single machine processing; parallel machine processing; multistage problems including flow-shops and job-shops. Complexity issues. Exact and heuristic solution methods. Average and worst case performance analysis of heuristic methods. Applications in manufacturing environments. Current research trends.
Note: Students who have taken ENCS 6201 may not receive credit for this course.

INDU 6311 Discrete System Simulation (4 credits)
Probability theory and queuing theory; discrete and continuous variables and their distributions; deterministic and stochastic models; building valid and credible models. Computer simulation of discrete-change systems subject to uncertainty techniques to verify quality of input data; analysis of output data; determination of simulation run-length and number of replications; random number generations, variance reduction techniques, transient and steady state behaviour; comparison of alternative systems. A project.
Note: Students who have taken ENGR 6491 may not receive credit for this course.

INDU 6331 Advanced Quality Control (4 credits)
Introduction to advanced quality control and improvement concepts. Fundamentals of statistical methods and theoretical basis for quality control methods. Advanced and newly developed quality control and improvement methods such as modified and acceptance charts, multiple stream process control, control charts with adaptive sampling and engineering process control for quality. International standards of acceptance sampling. Economic design and implications of quality control and improvement procedures. A project is required.

INDU 6341 Advanced Concepts in Quality Improvement (*) (4 credits)
The foundations of modern quality improvement, scientific basis of quality engineering, statistical experimental design issues such as randomized blocks, factorial designs at two levels, fractional factorial designs at two levels, applications on factorial designs, building models, and explanation and critique of Taguchi's contributions.
Note: Students who have taken MECH 6461 may not receive credit for this course.

INDU 6351 System Reliability (4 credits)
Review of probability theory; definition of various measures (reliability, availability, MTTF, etc.) and related probability distributions; reliability evaluation of redundant systems (series, parallel, series-parallel, bridge network, etc.); two and three parameter Weibull analysis; failure data analysis; trend analysis; goodness of fit test (Kolmogorov/Smirnov test); introduction of stress-strength modelling; homogeneous Markov models; reliability evaluation of cold, warm, and hot standby systems; introduction to reliability testing; case studies. Knowledge of a first course in probability theory is assumed.
Note: Students who have taken ENGR 6451 may not receive credit for this course.

INDU 6411 Human Factors Engineering (*) (4 credits)
Elements of anatomy, physiology and psychology; auditory and visual display engineering; engineering anthropometry; human capabilities and limitations; manual material handling: design of work places, human-machine system design; shift work and jet lag; acquisition and retention of skill; toxicity and hazard; human reliability.
Note: Students who have taken MECH 6251 may not receive credit for this course.

INDU 6421 Occupational Safety Engineering (*) (4 credits)
Engineering design for the control of workplace hazards. Occupational injuries and diseases. Codes and standards. Workplace Hazardous Materials Information System (WHMIS). Hazard evaluation and control. Risk assessment. Design of local ventilation systems for control of air borne contaminants: air movement through ducts, pressure losses, fan specification, balancing, hood design, air cleaning systems. Noise and noise protection: propagation of sound, barrier design, boundary surface treatment, enclosures.
Note: Students who have taken ENGR 6401 may not receive credit for this course.

MECH 6011 Analysis and Design of Pneumatic Systems (4 credits)
Principles and operating characteristics of fluidic elements; modelling of wall attachment; beam deflection; turbulent and vortex amplifiers; design and analysis of microdiaphram and diaphram ejector amplifiers; methods of evaluation performance characteristics of fluid devices; passive fluidic elements; digital and analog fluidic circuit theories and their applications; case studies of fluidic systems.

MECH 6021 Design of Industrial Control Systems (*) (4 credits)
Analog and digital control system design. Analog controller design methods: lead and lag compensators, pole placement, model matching, two-parameter configuration, plant input/output feedback configuration. Introduction to state-space control system. State estimator and state feedback. Introduction to digital

control system. Z-transform. Difference equations. Stability in the Z-domain. Digital implementation of analog controllers. Equivalent digital plant method. Alias signals. Selection of sampling time. PID controller. *Prerequisite*: ENGR 6101 or equivalent.

MECH 6041 Virtual Systems Engineering (4 credits)
Theory and application of virtual systems with an emphasis on virtual prototyping of mechanical systems. Virtual system modelling: particle systems, rigid body systems, lumped parameter models, and multi-domain system modelling. Non-real-time simulation methods: numerical integration methods, stiff systems and implicit methods. Hardware-in-the-loop simulation (HIL): Real-time simulation, multi-rate simulation and scheduling. Stability, invariance, and robustness. Virtual environments. Distributed simulation and time delay analysis. Design and analysis of virtual engineering systems: specification, design, verification, validation and prototype testing. A project. *Prerequisite:* Permission of the instructor.

MECH 6051 Process Dynamics and Control (*) (4 credits)
Dynamics of mechanical and chemical processes: linear and nonlinear system capacity, resistance, piping complexes; characteristics and dynamics of control valves; process time constants; proportional, reset and derivative control actions; feed forward and cascade control, direct digital control case studies on design of level control; p-4 control and heat exchanger control; analysis of industrial hazards and security.

MECH 6061 Analysis and Design of Hydraulic Control Systems (*) (4 credits)
Introduction to fluid power control technology; fundamentals of fluid transmission media; basic hydraulic control system components and circuits; hydraulic servosystems; modeling and dynamic analysis of hydraulic systems – design examples; basic pneumatic control system components and circuits – design examples.

MECH 6071 Switched and Hybrid Control System (4 credits)
Review of linear control design techniques for nonlinear systems and their limitations; introduction to Lyapunov stability, Lyapunov functions and LaSalle's invariance principle; introduction to switched and hybrid systems using piecewise-affine systems as a motivating example; modeling and simulation of switched and hybrid systems; switching policies, hybrid automata and executions; Lyapunov stability analysis of switched and hybrid systems; stability as a convex optimization problem; Lyapunov-based control of switched and hybrid systems; controller design as a non-convex problem; stability analyses and the controller design problems; dynamic programming and optimal control techniques; extensive examples from simplified models of industrial problems in the aeronautical, automotive and process industries. The

course includes a computer aided controller design project. *Prerequisite:* MECH 6021 or equivalent.

MECH 6081 Fuel Control Systems for Combustion Engines (4 credits)
Introduction to fuel control systems for combustion engines with fuel injection. Dynamics of fuel injection for steady-state and transient process; injection characteristics for different combustion patterns; speed and power control in relation to engine characteristics; design principles of fuel systems; special requirements for starting, shut-down, schedule modulation; testing methods; wear and reliability problems. Case studies include: multicylinder in-line injection pump, rotary distributor injection pump, mecano-pneumatic fuel control unit. Full term project work on alternative fuel delivery systems and emissions control for combustion engines. Modelling and simulation. Demonstration of alternative fuel injection system on diesel engine in lab. *Prerequisite:* ENGR 6201.

MECH 6091 Flight Control Systems (4 credits)
Basics of flight dynamics modeling: axes systems and notation; equations of motion; aerodynamic forces and moments, airplane stability, aircraft on the ground; simulator flight model design. Flight instruments: classification; principles of operation, cockpit displays. Flight controls basics: configuration; control forces; primary and secondary controls. Introduction to automatic flight control: stability augmentation; autopilots; flight guidance and flight management systems; design examples. Flight simulation: classification; standards and regulations; system configuration and components. Projects on selected topics. *Prerequisite:* ENGR 6101 or equivalent.

MECH 6101 Kinetic Theory of Gases (4 credits)
Equations of state for gases; molecular explanation of equations of state; introduction to quantum mechanics; the molecular theory of thermal energy and heat capacity; molecular velocity distribution, molecular collisions and the transport properties of gases, introduction to chemical kinetics.

MECH 6111 Gas Dynamics (*) (4 credits)
Combined effects in one-dimensional flow; multidimensional flow; method of characteristics; one-dimensional treatment of non-steady gas dynamics; shock wave interactions; instability phenomena of supersonic intake diffusers; shock-boundary layer interactions; flow of real gases; selected papers on combustion and detonation.

MECH 6121 Aerodynamics (*) (4 credits)
Flow conservation equations, incompressible Navier-Stokes equations, inviscid irrotational and rotational flows: the Euler equations, the potential and stream function equations. Kelvin, Stokes and Helmholtz theorems. Elementary flows and their superposition, panel method for non-lifting bodies. Airfoil and wing characteristics, aerodynamics forces and moments coefficients. Flow around

thin airfoils, Biot-Savart law, vortex sheets. Flow around thick airfoils, the panel method for lifting bodies. Flow around wings, Prandtl's lifting line theory, induced angle and downwash, unswept wings, swept compressibility correction rules, the area rule. Transonic flow: small disturbance equation, full potential equation, supercritical airfoils. *Prerequisite:* ENGR 6201.

MECH 6131 Conduction and Radiation Heat Transfer (4 credits)
Solutions by analytical, numerical, and analogue methods of steady and transient temperature fields with and without heat sources; introduction to convection. Basic concepts and relations of radiation heat transfer, radiation of strongly absorbing media, and radiation of weakly absorbing media. *Prerequisite:* ENCS 6011 or equivalent.

MECH 6141 Heat Exchanger Design (4 credits)
Review of heat transfer and flow losses; design consideration of heat exchangers; double pipe exchanger; shell and tube exchanger; extended surfaces; condenser, evaporator, regenerator, cooling tower.

MECH 6151 Process Equipment Design (4 credits)
Design of pressure vessels, towers, reactors, tanks, heat exchange piping systems, etc., as used in the petrochemical industry, power generation, pulp and paper and related industries. Compliance with pertinent codes and regulation; detailed analysis of shells, formed and flat closures expansion stresses, wind and earthquake loads; application on actual problems from industry. *Prerequisite:* ENCS 6011 or equivalent.

MECH 6161 Gas Turbine Design (*) (4 credits)
Study of practical criteria which influence the design of a gas turbine engine including relevant mechanical and aerodynamic constraints. The aerodynamics of each of the three major components of a modern turbo-fan engine, namely the compressor, the combustor and the turbine is considered. Air system acoustics, engine aerodynamic matching of components and modern performance testing methods. A design project is assigned for each of these components. *Prerequisite:* MECH 6171.

MECH 6171 Turbomachinery and Propulsion (*) (4 credits)
Review of the gas turbine engine cycle and components arrangement. Types of turbo-propulsion for aircraft: turboprop, turbofan and turbojet. Energy transfer in incompressible and compressible turbomachines: the Euler equation, velocity triangles. Axial-flow compressors; mean-line analysis. Mechanisms of losses in turbomachines. Three-dimensional motion in turbomachines; the radial equilibrium equation and its numerical solution by finite difference methods. Dimensional analysis of incompressible and compressible flow in turbomachines, compressor and turbine performance maps; surge and stall. Centrifugal compressors. Axial-flow turbines. Prediction of performance of gas turbines, components matching. *Prerequisite:* ENGR 6201.

MECH 6181 Heating, Air Conditioning and Ventilation (4 credits)
The effect of air temperature, humidity and purity on physiological comfort; overall heat transmission coefficients of building sections, air infiltration, ventilation and solar radiation loads; heating and air conditioning load calculations; heating, air conditioning and ventilating systems, equipment and controls; design of hot water piping and air distribution systems, pressure drop calculations; selection and specifications of mechanical equipment for heating, ventilation and air conditioning applications.

MECH 6191 Combustion (4 credits)
Chemical thermodynamics; review of chemical kinetics; conservation equations for multicomponent reacting systems; detonation and deflagration of premixed materials; premixed laminar flames; gaseous diffusion flames, droplet combustion; turbulent flames; two-phase reacting systems; chemically reacting boundary layers. *Prerequisite:* MECH 6111.

MECH 6221 Advanced Turbomachinery (4 credits)
The course deals with the aerodynamics of turbomachines with emphasis on compressible flow machines. Review of turbomachinery fundamentals; energy transfer, reaction, efficiency, performance characteristics. Description of flows in turbomachinery passages: lift and drag cascade performance data, three-dimensional flow patterns; blade-to-blade and through-flow numerical analyses. Aerodynamic losses in turbomachines: types, loss coefficients, correlations, models, performance evaluation. The aerodynamics of axial and radial machines: factors affecting design, selection of parameters, preliminary design, airfoil design, off-design performance. *Prerequisite:* MECH 6171.

MECH 6231 Helicopter Flight Dynamics (4 credits)
Fundamental aspects of helicopter technology; rotary wing aerodynamics; aeromechanical stability; hover and forward flight performance; ground and air resonance; introduction to vibration and structural dynamic problems in helicopter; case studies in the rotorcraft field. *Prerequisites:* ENGR 6311 and MECH 6121, previously or concurrently.

MECH 6241 Operational Performance of Aircraft (4 credits)
Introduction to fixed-wing aircraft operation. Flying environment and its measurement by aircraft instrumentation. Computation of lift and drag, effects of viscosity and compressibility. Review of piston, turboprop, turbojet and turbofan powerplants. Operational performance of aircraft in climb, cruise, descent and on ground. Advanced aircraft systems. Operational considerations in aircraft design. *Prerequisite:* MECH 6121.

MECH 6261 Mathematical Methods for Aerothermodynamics (4 credits)
General tensor analysis; Navier-Stokes equations; perturbation methods: regular, singular and matched asymptotic expansions (boundary layer theory); calculus of variations; conformal mapping; Schwartz-Christoffel

transformations; mathematical aspects of wave theory; applications to mechanical engineering problems.

MECH 6301 Vibration Problems in Rotating Machinery
Torsional vibrations critical speeds, rotors driven by reciprocating machines, finite element modelling, whirling of shafts, gyroscopic effects, rotors on fluid film bearings, instability in torsional and bending vibrations, balancing, response to support excitations, condition monitoring. *Prerequisite:* ENGR 6311.

MECH 6311 Noise and Vibration Control (4 credits)
Introduction to noise and vibration, measurement units. Review of wave theory, noise control criteria and standards, sources and nature of mechanical equipment noise, devices for noise control such as silencers, baffles and acoustic enclosures. Machinery vibration sources, radiation of noise from vibrating structures, devices and methods for vibration control such as isolators, dampers, absorbers and in-situ balancing. Active control of noise and vibration. *Prerequisite:* ENGR 6311.

MECH 6321 Optimum Design of Mechanical Systems (4 credits)
Survey of practical methods for optimum design of mechanical systems; optimal performance criteria and selection of design variables. Introduction to analytical and numerical optimization methods for single- and multi-variable unconstrained problems: direct search and gradient methods. Constrained optimization. Optimality criterion techniques for mechanical systems. Case studies in the area of machine tools, structural systems, machine element design, vehicle design, and hydraulic control systems. Discussion on commercial software packages, their capability, availability and limitations.

MECH 6351 Modal Analysis of Mechanical Systems (4 credits)
Natural frequencies and normal modes of multi-degree-of-freedom systems; orthogonality of normal modes; eigenvalue and eigenvector extraction methods; vibration response using normal mode analysis; complex natural frequencies and complex modes in damped systems, modal damping random response considerations; nonsymmetric systems using biorthogonality relations; modal parameter identification from tests, application of modal analysis to mechanical systems. *Prerequisite:* ENGR 6311.

MECH 6361 Mechanics of Biological Tissues (4 credits)
The course deals with mechanical behaviour of tissues in human body such as bone, cartilage, ligaments, tendons, blood vessels, muscles, skin, teeth, nerves. Classification of biological tissues; mechanical properties in vivo and in vitro testing; constitutive relationships, viscoelastic behaviour and rate/time dependency; remodelling and adaption due to mechanical loading; analogous mechanical systems.

MECH 6371 Design and Fabrication of Microsystems and Devices (4 credits)
Introduction to microsystems and devices; mechanical properties of materials used in microsystems; microfabrication and post-processing techniques; sacrificial and structural layers; lithography, deposition and etching; introduction and design of different types of sensors and actuators; micromotors and other microdevices; mechanical design, finite element modelling; design and fabrication of free-standing structures; microbearings; special techniques: double sided lithography, electrochemical milling, laser machining, LIGA, influence of IC fabrication methods on mechanical properties; application examples in biomedical, industrial and space technology areas; integration, bonding and packaging of MEMS devices. This course includes a project.

MECH 6411 Theory and Design of Machine Tools (4 credits)
Dynamics and self-induced vibrations in the metal cutting process; analysis and design of speed change gears; mechanical, electrical and hydraulic drives; hydraulic copying systems and automatic control; numerical control of machine tools; machine tool vibrations; random processes in manufacturing systems.

MECH 6421 Metal Machining and Surface Technology (4 credits)
Theoretical and practical aspects of mechanics and dynamics of metal machining; tool geometry in machine and working reference systems with their transformation matrices; machinability; wear; cutting forces; temperature distribution; tool material unconventional machining; machining economics; optimizing techniques for cutting conditions; surface mechanics and application of random processes.

MECH 6431 Introduction to Tribology (Wear, Friction and Lubrication) (4 credits)
Contact between stationary surfaces; dry friction; rolling contract; wear; boundary lubrication; lubricating oils and greases; hydrodynamic journal bearings; case studies in Tribology as applied to design and manufacturing problems.

MECH 6441 Stress Analysis in Mechanical Design (4 credits)
Stress analysis for design of elastic and visco-elastic mechanical components subject to thermal, fatigue, vibrational and chemical environments; buckling and creep; cumulative damage. Case studies.

MECH 6451 Computer-Aided Mechanical Design (4 credits)
Concept of value and decision theory in design; design application and case studies in the implementation of digital computer-oriented design of engineering systems. Examples include design of specific machine elements, design of vehicle suspension, hydraulic positioning systems, ship propulsion system, multi-speed gear box, and cam drives. Introduction to identification, optimization, and parameter sensitivity. Implementation of these methods uses remote terminals and graphic display units. A project.

MECH 6471 Aircraft Structures (4 credits)
Aero/performance aspects of aircraft structures; Airworthiness and design considerations; Materials; Static, vibratory and aeroelastic loadings; Propulsion-induced loadings; Functions and fabrication of structural components; Stress analysis of wings, fuselages, stringers, fuselage frames, wing ribs, cut-outs in wings and fuselages, and laminated structures; Buckling of aircraft structures: local buckling, instability of stiffened panels; flexural-torsional buckling; Fracture and fatigue failures. Case studies.

MECH 6481 Aeroelasticity (4 credits)
Aerodynamic loading of elastic airfoils; phenomenon of divergence; effect of flexible control surface on divergence of main structure; divergence of one- and two-dimensional wing models; phenomenon of flutter; flutter of two- and three-dimensional wings; approximate analysis techniques; flutter prevention and control; panel flutter in high speed vehicles; flutter of turbomachine bladings; vortex induced oscillations; bridge buffeting.

MECH 6501 Advanced Materials (4 credits)
Advanced composites. Polymer matrix composites. Resins and fibers. Metal matrix composites. Ceramic matrix composites. Interfaces. Mechanical properties. Applications.

MECH 6511 Mechanical Forming of Metals (*) (4 credits)
Mechanisms of plastic deformation at ambient and elevated temperatures; plasticity theory; mechanical forming processes; forging; rolling; extrusion; wire drawing; deep drawing; bending; results of processing; mechanical properties; residual stresses; fibrous textures and preferred orientations; effects of annealing. Process modelling by shearline or finite element analysis.

MECH 6521 Manufacturing of Composites (4 credits)
Hand lay-up. Autoclave curing. Compression molding. Filament winding. Resin transfer molding. Braiding. Injection molding. Cutting. Joining. Thermoset and thermoplastic composites. Process modelling and computer simulation. Nondestructive evaluation techniques.

MECH 6531 Casting (4 credits)
Phase equilibrium diagrams; mechanisms of solidification; design of castings for various moulding processes, section sizes, dimensional accuracies and surface finishes; continuous casting; control of grain size; segregation and porosity. Defects in castings.

MECH 6541 Joining Processes and Nondestructive Testing (4 credits)
Principles of joining; fusion welding; arc, torch, plasma, electron beam, resistance, etc; solid state welding; heterogeneous hot joining (brazing, soldering); heterogeneous cold joining; metallurgy of joints; joint properties;

nondestructive testing processes; radiography, ultrasonic, magnetic particle, die penetrant, etc. Project on current research topic or selected applications.

MECH 6551 Fracture (4 credits)
Fracture mechanisms; ductile and cleavage; brittle fracture; notch effects; propagation of cracks; ductile-brittle transition; inter-granular fracture; hydrogen embrittlement; fatigue initiation mechanisms; crack propagation; preventive design; creep failure, mechanisms maps, fatigue; pore formation; grain boundary sliding; high temperature alloys, testing techniques; fractography.

MECH 6561 High Strength Materials (4 credits)
Studies of the microstructures responsible for high strength and of the thermomechanical treatments producing these microstructures; dislocation theory; strain hardening; strengthening by solid-solution, massive hard phases, precipitation, dispersed particles, and martensitic and bainitic structures; fibre and particulate composites; surface treatments; residual stresses of thermal or mechanical origin.

MECH 6571 Corrosion and Oxidation of Metals (4 credits)
Electrochemical corrosion and preventative measures. Stress corrosion, corrosion fatigue. Oxidation at low and high temperatures and protective measures. Selection of alloys and coatings.

MECH 6581 Mechanical Behaviour of Polymer Composite Materials (4 credits)
General applications of polymer composite materials in the aircraft, aerospace, automobile, marine, recreational and chemical processing industries. Different fibres and resins. Mechanics of a unidirectional lamina. Transformation of stress, strain, modulus and compliance. Off-axis engineering constants, shear and normal coupling coefficients. In-plane and flexural stiffness and compliance of different laminates including cross-ply, angle-ply, quasi-isotropic and general bidirectional laminates. Strength of laminates and failure criteria. Micro-mechanics.

MECH 6591 Efficient Utilization of Materials and Energy in Manufacturing Processes (4 credits)
Methods of increasing the product/raw material yield ratio in the processing of metals, polymers and ceramics. Analysis of material flow through sequences of manufacturing to raise efficiency by improved process control and discrimination in product quality. Case studies of new technologies and materials which conserve resources. Energy savings through review of plant mechanical and electrical services. Energy accounting, raw material energy inputs. Methods to increase in-house and external scrap recycling. Design of product to facilitate recycling. *Prerequisite:* Permission of the instructor.

MECH 6601 Testing and Evaluation of Polymer Composite Materials and Structures (4 credits)
Theory and practice for the determination of tensile, compression and shear properties of composite materials; techniques for the determination of physical and chemical properties; non-destructive techniques such as ultrasonics, acousto-ultrasonics, acoustic emission, infrared and lasers for evaluation of composite structures.

MECH 6611 Numerically Controlled Machines (4 credits)
Positioning and contouring NC machines, typical NC applications; analysis of typical NC systems and design considerations; components. *Prerequisite:* MECH 6451 or equivalent.

MECH 6621 Microprocessors and Applications (*)(4 credits)
Introduction to the concepts and practices of using microprocessors and micro-computers in such applications as instrumentation, manufacturing, control and automation; architecture and programming techniques; interface logic circuits; I/O systems; case studies of mechanical engineering applications. *Prerequisite:* A course in industrial electronics or permission of the instructor.

MECH 6631 Industrial Automation (4 credits)
Introduction to mechanization of industrial processes such as machining, material handling, assembling, and quality control; selection of actuators and sensors for mechanization; design of sequential control circuits using classical methods, ladder diagram, travel-step diagram and cascade method; specifying control sequences using GRAFCET and FUP; special purpose circuits such as emergency circuits, timers, and programmable logic controllers (PLCs); case studies dealing with typical industrial manufacturing processes and computer simulation.

MECH 6641 Engineering Fracture Mechanics and Fatigue (4 credits)
Fracture mechanics and fatigue of machine elements and structures; Linear Elastic Fracture Mechanics (LEFM); Elastic Plastic Fracture Mechanics (EPFM); Finite Element Analysis for fracture; LEFM and EPFM Testing; Fracture mechanics approach to fatigue crack growth problem; Constant-amplitude, variable-amplitude and stochastic loading cases; Industrial applications to mechanical design and fracture and fatigue control in machine elements and structures; Damage tolerance design.

MECH 6651 Structural Composites (4 credits)
Analysis for design of beams, columns, rods, plates, sandwich panels and shells made of composites; anisotropic elasticity; energy methods; vibration and buckling; local buckling in sandwich structures; free edge effects and delamination; joining; and failure considerations in design.

MECH 6671 Finite Element Method in Machine Design (4 credits)
Role of Finite element method in machine design. Variational principles. Formulation of the finite element problem in stress, vibration and buckling analyses of machine components. Different elements and interpolation functions. Application in machine design; fracture. *Prerequisite:* MECH 6441.

MECH 6681 Dynamics and Control of Nonholonomic Systems (4 credits)
Kinematics of nonholonomic systems; dynamics of nonholonomic systems, including d'Álembert principle, Euler-Lagrange equations; equations of motion of nonholonomic systems with Lagrangian multipliers; the reaction of ideal nonholonomic constraints; nonholonomic Caplygin systems; Bifurcation and stability analysis of the nonholonomic systems. Analysis and design of nonlinear' control of nonholonomic systems, including kinematic control and dynamic control as well as force control. Controller designs with uncertain nonholonomic systems. Application examples including control of wheeled mobile robots and walking robots.

MECH 6751 Vehicle Dynamics (4 credits)
Tire-terrain interactions; side-slip; cornering and aligning properties of tires: camber angle and camber torque; estimation of braking-tractive and cornering forces of tires; steady-state handling of road vehicles: steering response and directional stability; handling and directional response of vehicles with multiple steerable axles: handling of articulated vehicles: handling and directional response of tracked and wheeled off-road vehicles; directional response to simultaneous braking and steering.

MECH 6761 Vehicular Internal Combustion Engines (*) (4 credits)
Mechanical design of vehicular engines; gas exchange and combustion engine processes; combustion chambers design; fuels and fuel supply; ignition and control systems; cooling and lubrication of engines; emissions formation and control; engine operational characteristics - matching with vehicles; enhancement of engine performance; engine testing; environmental impact of vehicular engines; recent developments in energy-efficient and "clean" engines. Design of calculation project of vehicular engine.

MECH 6771 Driverless Ground Vehicles (*) (4 credits)
Definition and classifications; case studies of major industrial and research vehicle prototypes; applications; kinematic modelling for feedback control of a driverless vehicle as a planar rigid body; vehicle motion and its relation to steering and drive rates of its wheels; co-ordinate systems assignment; transformation matrices; condition for rolling without skidding and sliding; sensor models and sensor integrations; dead-reckoning control; global and local path planning; introduction to dynamic modelling of driverless vehicle with and without the dynamics of wheel assemblies; design of optimal controllers; introduction to adaptive neuro-morphic controller. Projects are an integral part of the course for which the following may be used: TUTSIM, FORTRAM, or C.

MECH 6781 Guided Vehicle Systems (*) (4 credits)
Definition and classification of guided transportation systems; track characterization: alignment, gage, profile and cross-level irregularities; wheel-rail interactions: rolling contact theories, creep forces; modeling of guided vehicle components; wheelset, suspension, truck and car body configurations, suspension characteristics; performance evaluation: stability/ hunting, ride quality; introduction to advanced guided vehicles.

MECH 691 Topics in Mechanical Engineering I (4 credits)
See Note on page 427.

MECH691X Topics in Mechanical Engineering I: Computer Control of Aerospace Systems (4 credits)
Case studies of computer-controlled aerospace systems with an emphasis on the control prototyping of actual electro-mechanical systems such as UAVs, satellites and missiles. Discrete-time analysis, modelling and simulation of electro-mechanical systems; signals and systems, transform methods, discrete-time and sampled-time data models, multi-rate systems, digital simulation. Design of computer-controlled electro-mechanical systems; direct discrete-time design, digital redesign, sampled-data design, optimal approaches, and tools for performance assessment. Study of control design and implementation issues; aerospace system non-linearities, impact of actuators and sensors, selection of sampling rates, finite word length effects, intersample considerations, controller complexity, numerical issues, real-time issues. A Project.

MECH 6941 Concurrent Engineering in Aerospace Systems (4 credits)
Introduction: objectives, definitions, impact on product development; process modeling and optimization; forming of engineering team; selection of techniques, methodology and tools; market design focus vs. quality design focus; development time management; process integration; aerospace case studies/projects, future trends.

MECH 6961 Aerospace Case Study I
See page 414.

MECH 6971 Aerospace Case Study II
See page 414.

Note: MECH 6961 and MECH 6971 are restricted to students registered in aerospace engineering programs at Concordia or participating universities. These courses cover topical case studies drawn from aerospace industrial experience. They are conducted in a modular form by experienced engineers who specialize in one or more facets of this industry. They are given in collaboration with the other participating universities and may be conducted at any of the Montreal universities in the language of convenience to the instructor.

MECH 7011 Dynamics of Hydraulic Control Systems (4 credits)
Review of hydraulic control system technology and the need for dynamic analyses. Conventional techniques for assuring good response by analysis. Power flow modelling, power bond graphs, and digital simulation techniques. Obtaining dynamic relationships and coefficients. Phenomena which can affect dynamic response. *Prerequisites:* MECH 6021, 6061.

MECH 7101 Convection Heat Transfer (4 credits)
Heat transfer in laminar flow, review of the differential and integral forms of the general energy equation for boundary layer regimes; solution of the energy equation for free convection, forced convection and heat transfer in entrance regions. Heat transfer in turbulent flow; review of the energy equation for turbulent flow; momentum-heat transfer analogies; experimental results for forced convection, free convection, and combined free and forced convection. *Prerequisite:* ENGR 62011.

MECH 7221 Space Flight Mechanics and Propulsion Systems (4 credits)
Tsiolkovskij equation; spacecraft attitude determination, prediction and control; nozzle design; heat transfer in rocket motors; flight performance; chemical rocket performance analysis; fundamentals of liquid and solid motor design; electric, solar, fusion thruster. *Prerequisite:* MECH 6111.

MECH 7231 Aerothermodynamics of Viscous Fluid Flows (4 credits)
Review of basic concepts of continuum mechanics: mass momentum and energy conservation; Navier-Stokes equations and the boundary layer assumption; thin shear layer: wake and jets in general curvilinear coordinates; similarity in incompressible flow; Falkner-Skan equation; integral methods; Thwaite's method, Karman's method, Pohlhausen's Method; Crocco's result and similarity in compressible flow; Stewart-Illingsworth; internal flow applications; external flow applications; boundary layer stability; Orr-Sommerfeld equation; laminar separation; Stratfor's criterion; transition and turbulence: experimental observations, modelling; turbulent separation: Stratford's criterion.

MECH 7411 Mechanisms and Linkage Design (4 credits)
Geometry of motion and mobility criteria; synthesis of planar and space mechanisms, dynamic analysis of mechanisms; industrial applications of mechanisms; mechanical robots and manipulators. *Prerequisite:* ENGR 6301.

MECH 7501 Design Using Composite Materials (4 credits)
General concept involving design using composite materials. Integral approach to design. Selection of materials. Selection of fabrication techniques. Computer-aided design tools. Consideration for fracture, fatigue, buckling and impact. Joining consideration. Design of tubes, beams, columns. Design of aircraft components. *Prerequisite*: MECH 6581.

MECH 7511 Vehicle Vibration and Control (4 credits)
Dynamic modelling of ground vehicles for analysis of ride performance; ride comfort and safety criteria; modelling of human body; characterization of road inputs; modelling and design of vibration isolators: primary suspension, secondary suspension; active, semi-active and passive isolators; kinematic and dynamic analysis of suspension linkages; laboratory methods for performance evaluation of vehicle suspension systems; software packages and case studies.

MECH 7711 Handling and Stability of Road Vehicles (4 credits)
Mathematical methods in vehicle dynamics; tire and suspension modelling and design for handling; static roll; steady turning and off-tracking analysis of straight and articulated road vehicles; directional stability and braking analysis; directional response of articulated vehicles with steerable axles; software packages and case studies. *Prerequisite:* MECH 6751 or equivalent.

MECH 791 Topics in Mechanical Engineering II (4 credits)
See Note on page 427.

MECH 8011 Doctoral Seminar in Mechanical Engineering
Grading on a pass/fail basis only. No credit value

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Computer Science and Software Engineering

Faculty

Professors: J. William Atwood, Tien D. Bui, Gregory Butler, Vasek Chvatal, Bipin C. Desai, Eusebius J. Doedel, Peter Grogono *(Associate Chair)*, Adam Krzyzak, Clement W.H. Lam *(Chair)*, Hon Fung Li (*Director, Graduate Program (Research)*), John McKay, Sudhir P. Mudur *(SOEN Undergraduate Program Director)*, Jaroslav Opatrny, Thiruvengadam Radhakrishnan, Ching Y. Suen; ***Associate Professors:*** Sabine Bergler, Terrill Fancott, David Ford (CS *Undergraduate Program Director*), Gosta Grahne, Volker Haarslev, Hovhannes Harutyunyan *(Graduate Program Director)*, Rajagopalan Jayakumar *(Co-op Director)*, Stan L. Klasa, Lata Narayanan, Joey Paquet, David K. Probst, Juergen Rilling, Ahmed Seffah, Xin Wei Sha; ***Assistant Professors:*** Patrice Chalin, Constantinos Constantinides, Todd Eavis, Thomas Fevens, Dhrubajyoti Goswami, Leila Kosseim, Olga Ormandjieva, Nematollaah Shiri-Varnaamkhaasti; ***Professors Emeriti:*** Vangalur Alagar, Graham Martin, Rajjan Shinghal; ***Adjunct Professors***: Tony Kasvand,Yun Yan Tang; ***Adjunct Assistant Professors:*** Wojciech M. Jaworski, Louisa Lam.

Programs

The Department of Computer Science and Software Engineering offers the degrees of Doctor of/Doctorate in Philosophy, Master of/Magisteriate in Computer Science, Master of/Magisteriate in Applied Computer Science, and a graduate Diploma in Computer Science

Program Objectives

The Master of/Magisteriate in Computer Science is designed to provide students with an opportunity to strengthen their knowledge in a specific area of computer science in the broad sense, and to provide a significant introduction to research. The research results will be presented in a thesis, which must be defended in an oral examination. This program will appeal primarily to students interested in full-time study. The Master of/Magisteriate in Applied Computer Science provides a sound education in the theory and applications of computing so that one can orient towards computer applications in industry and commerce. The program is open to candidates employed in industry or commerce who wish to study on a part-time basis. This program consists of only course work.

Doctoral studies can be pursued in one of the following areas: algorithms and complexity, bioinformatics, computational mathematics and visualization;

databases and information systems; human computer interactions; knowledge representation, evolving systems; natural language processing; parallel and distributed computer systems; pattern recognition, machine intelligence, image processing; programming languages and methodology; software engineering and theoretical computer science. A thesis based on this work must be submitted and defended in an oral examination.

Graduate students in computer science have access to a wide range of laboratory and computing facilities. There are laboratories for database and information systems, software engineering, distributed systems, computer networks, computational mathematics and visualization, pattern recognition and machine intelligence, computational linguistics, fungal genomics and usability testing, and projects. The Department also makes extensive use of the university's central computing systems.

Faculty Research Interests

In addition to individual and team research grants, the department is participating in various research centres. Already a leader in optical character recognition, the department has established a Centre of Excellence in the areas of pattern analysis and machine intelligence (CENPARMI) to further strengthen its expertise in these areas and to foster closer ties with industry. The Inter-University Centre of Algebraic Computation (CICMA) consists of researchers from Concordia, Laval and McGill Universities. Its purpose is to develop techniques and software for investigating discrete mathematical problems by computer. The Centre provides computing facilities and a variety of software for symbolic computation to graduate students and faculty. With many new faculty members joining the Department recently, new research labs have been created. The CLaC (Computational Linguistics at Concordia) Lab is interested in all aspects of Natural Language Processing from theoretical research of linguistic phenomena such as coreference to the development of specific applications such as automatic summarizers or question-answering systems. The CONCEPT (Comprehension of Net-Centered Programs and Techniques) Project also created recently has the major goal in addressing current and future challenges in the comprehension of large and distributed systems, by providing programmers with novel comprehension techniques. These techniques are based on a variety of source code analysis, visualization, and application approaches. The project is being expanded to include distributed and client server based systems. The Human-Centered Software Engineering group is a multidisciplinary research group interested in all aspects of software usability and user interface engineering. The group is powered by a usability testing laboratory which includes state-of-the-art infrastructure and tools for locally and remotely observing users when using software, recording their interaction and feedback, measuring quality in use, as well as modeling and integrating human experiences/factors into software development practices. The Concordia Database Group is interested in the following main

topics of research: semi-structured data and XML, data warehousing, OLAP, and data mining, logic programming and deductive databases, information integration, querying the internet, and data management issues in e-commerce. Modeling and reasoning with incomplete data in DB and KB systems. Faculty from the department are also members of the Centre for Structural and Functional Genomics (CSFG) which is comprised of a dynamic, multi-disciplinary team of people, including biologists, biochemists and bioinformaticians. With the help of a $3 million CFI grant, a state-of-the-art core genomics facility has been assembled along with the computational resources necessary to sequence, process and store the genetic information of various organisms. The CSFG members lead a $7M large-scale Genome Canada project on fungal genomics. The Research Laboratory for Bioinformatics Technology (BioIT) carries out research, development, and application of advanced computing technology to the problems of genomics. Areas of interest include the semantic web, ontologies, description logics; database technology; data and text mining; and algorithms. The Department has already developed powerful software systems in-house, including the AUTO mathematical software systems, which has been used by research centers around the world.

Doctor of/Doctorate in Philosophy (Computer Science)

Major areas for doctoral work are: 1. Algorithms and Complexity; 2. Bioinformatics; 3. Computational Mathematics and Visualization; 4. Databases and Information Systems; 5. Human Computer Interactions; 6. Knowledge Representation, Evolving Systems; 7. Natural Language Processing; 8. Parallel and Distributed Computer Systems; 9. Pattern Recognition, Machine Intelligence, Image Processing; 10. Programming Languages and Methodology; 11. Software Engineering; 12. Theoretical Computer Science.

The requirements for the degree of Doctor of/Doctorate in Philosophy are described in the general section on the Faculty of Engineering and Computer Science.

Master of/Magisteriate in Computer Science (M.Comp.Sc.)

This program is designed to provide students with an opportunity to strengthen their knowledge in a specific area of computer science, and to provide a significant introduction to research. Potential students in this program include graduates from other disciplines with good computer science background or computer science graduates who want to further their knowledge and do research in one of the specific areas of computer science. It will appeal primarily to the student interested in full-time study. Students graduated from cognate disciplines such as mathematics, electrical and computer engineering who have done computer science core courses may apply. Graduates of the

program will be prepared for further study at the doctoral level; occupations in research and development in business, industry, and government; consulting and design in the field of information processing systems; and teaching of computer science.

Admission Requirements. Applicants to the M. Comp.Sc. program must hold a bachelor's degree in computer science or other disciplines such as engineering, sciences, and mathematics with very high standing. Qualified applicants requiring prerequisite courses may be required to take such courses in addition to their regular graduate program.

The Faculty reserves the right to require applicants to write tests of competence in English as a second language, and to take any English instruction deemed necessary as a result of such tests.

Application Deadlines. Applications for admission from within Canada must be complete by June 1 for the Fall term, and February 1 for the Summer term., and October 1 for the Winter term. Applications from outside Canada must be complete by February 15 for the Fall term, October 15 for the Summer term and June 15 for the Winter term.

Requirements for the Degree

Program of Study. A fully qualified candidate is required to complete successfully a minimum of 45 credits. Each individual program of study must be approved by the department.

Completion. Normally a full-time student will require six terms to complete the degree requirements.

Transfer Credits. Students may be granted transfer credits for, in general, not more than 8 credits taken in approved graduate studies prior to their entry in this program. A course submitted for transfer credit must be appropriate to the student's program of study at Concordia University. An application for such credit will be considered only at the time of admission.

Cross-Registration. A student in the program wishing to take courses under the cross-registration scheme outlined in the graduate calendar must first obtain permission of the graduate program director.

Time Limit. All work for a master's/magisteriate degree for full-time students must be completed within 12 terms (4 years) from the time of initial registration in the program at Concordia University; for part-time students the time limit is 15 terms (5 years).

Thesis. Students must complete a 29-credit thesis as part of their degree requirements. The thesis must represent the results of the student's independent work after admission to the program. The proposed topic for the thesis, together with a brief statement outlining the proposed method of treatment, and the arrangement made for faculty supervision, must be approved by the graduate studies committee. For purposes of registration, this work will be designated as COMP 7941 Master's Research and Thesis. The thesis will be evaluated by the student's supervisor(s), and at least two examiners appointed by the graduate studies committee. Students who are admitted before June 1, 2001 may take COMP 7921.

Students must complete 45 credits as shown below:

Courses. Students must complete a minimum of 16 credits of courses of which at least 12 credits must be chosen from the Computer Science courses section of the Graduate Calendar or from Topic Area F03 (ASIC) or from Topic Area C12 (cognate discipline). A maximum of four credits can be chosen from computer science courses at the 6000 level marked with (*). The student's study program must be approved by the supervisor(s) and either the Graduate Program Director or the Department Chair.

Thesis. 29 credits.

Master of/Magisteriate in Applied Computer Science (M.Ap.Comp.Sc.)

This program provides a sound education in the theory and applications of computing, so that one can orient towards computer applications in industry and commerce. The program is open to candidates engaged in full-time study and also to candidates employed in industry or commerce who wish to study on a part-time basis. This program consists only of course work. Graduates of the program will be prepared for occupations such as management functions in business, industry, government, and education; consulting and design in the field of information processing systems, and teaching of computer science.

Admission Requirements. Applicants must hold an undergraduate degree in computer science or a graduate diploma in computer science. Admission to the program is competitive and only applicants with high academic standing will be considered. The Faculty reserves the right to require applicants to write tests of competence in English as a second language, and to take any English instruction deemed necessary as a result of such tests. The graduate studies committee, in consultation with the department, is responsible for recommending on all applications for admission.

Application Deadlines. Applications for admission from within Canada must be complete by May 1 for the Fall term and October 1 for the Winter term.

Applications from outside Canada must be complete by January 1 for the Fall term and May 1 for the Winter term.

Requirements for the Degree

Program of Study. The student, in consultation with faculty, must plan an individual program of study approved by the department graduate studies committee.

Credits. A fully-qualified candidate is required to complete successfully a minimum of 45 credits. Additional credits may be required in some cases.

Completion. Normally a full-time student will require six terms to complete the degree requirements.

Transfer Credits. A student may be granted credit for, in general, not more than 12 credits taken in approved graduate studies prior to his or her entry into this program. A course submitted for transfer credit must be appropriate to the student's program of study at Concordia University. An application for such credit will be considered only at the time of admission.

Cross-Registration. A student in the program wishing to take courses under the cross-registration scheme outlined in the graduate calendar must first obtain permission of the graduate program director.

Time Limit. All work for a master's/magisteriate degree for full-time students must be completed within 12 terms (4 years) from the time of initial registration in the program at Concordia University; for part-time students the time limit is 15 terms (5 years).

Courses. Students must take a minimum of 45 credits of course work including 6 courses of core comprising of COMP 6231, COMP 6441, COMP 6461, COMP 6471, COMP 6521 and COMP 6651, a maximum of 8 credits chosen from computer science courses at the 6000 level marked with a (*), a maximum of 4 credits chosen from COMP 5261 and COMP 5421, a maximum of 8 credits from Topic Area C09 (Cognate Courses from Engineering), and a minimum of 8 credits of courses not marked with a (*) from Computer Science courses or from Topic Areas F03 and C08, or courses INSE 7100, INSE 7110 and INSE 7120 from Topic Area E70.

Transitional Arrangements: All students admitted for or after the summer 2001 session will be subject to the new set of degree requirements. Students admitted before the summer 2001 session will retain credits already earned. They will have the choice of either the old or the new set of requirements. Old thesis and project numbers will be retained as a transitional arrangement for these students. The Graduate Program Director and student advisors will assist

students in choosing how to meet the old or the new set of requirements. Students are not allowed to enroll in both old and new versions of the same course.

LIST OF COURSES IN COMPUTER SCIENCE BY TOPIC AREAS

C00 - General

ENCS 5821 Technical Composition and Communication

C01 - DEVELOPMENTS IN COMPUTER SCIENCE

COMP 691 Topics in Computer Science I
COMP 791 Topics in Computer Science II

C02 - COMPUTER ARCHITECTURE

COMP 6231 Distributed Systems Design
COMP 6281 Computer Systems Design
COMP 7231 Distributed Computer Systems
COMP 7241 Parallel Algorithms and Architectures
COMP 7251 Mobile Computing and Wireless Networks

C03 - NUMERICAL ANALYSIS AND SCIENTIFIC COMPUTING

COMP 6351 Topics in Scientific Computation
COMP 6361 Numerical Analysis of Nonlinear Equations

C04 - SOFTWARE SYSTEMS AND LANGUAGES

COMP 6411 Comparative Study of Programming Languages
COMP 6421 Compiler Design (*)
COMP 6431 Software Comprehension and Maintenance
COMP 6441 Advanced Programming Practices
COMP 6461 Computer Networks and Protocols
COMP 6471 Software Design Methodologies
COMP 6481 Systems Requirements Specification
COMP 6491 Systems Software
COMP 7451 Semantics of Programming Languages
COMP 7481 Software Verification and Testing

C05 - INFORMATION PROCESSING AND MANAGEMENT

COMP 6521 Advanced Database Technology and Applications
COMP 6531 Foundations of the Semantic Web
COMP 6591 Introduction to Knowledge-Base Systems

COMP 7521 Cryptography and Data Security
COMP 7531 Database Systems Principles
COMP 7541 Heterogeneous Database Systems
COMP 7551 Advanced Topics in Knowledge-Base Systems

C06 - THEORETICAL COMPUTER SCIENCE AND ALGORITHMS

COMP 6611 Applications of Symbolic and Algebraic Computation
COMP 6641 Theory of Computation
COMP 6651 Algorithm Design Techniques
COMP 6661 Combinatorial Algorithms
COMP 6671 Introduction to Symbolic and Algebraic Computation (*)
COMP 7651 Advanced Analysis of Algorithms
COMP 7671 Combinatorial Search Techniques

C07 - ARTIFICIAL INTELLIGENCE AND MAN-MACHINE COMMUNICATION

COMP 6711 Computational Geometry
COMP 6721 Introduction to Artificial Intelligence (*)
COMP 6731 Pattern Recognition (*)
COMP 6741 Introduction to Expert Systems (*)
COMP 6751 Human Computer Interface Design
COMP 6761 Advanced 3D Graphics for Game Programming
COMP 6771 User Interface Development Tools and Techniques
COMP 7661 Advanced Rendering and Animation
COMP 7731 Software Usability Testing and Evaluation
COMP 7741 Natural Language Interfaces
COMP 7751 Pattern Recognition and Image Processing
COMP 7761 Intelligent User Interfaces
COMP 7771 Computer Vision

C08 - COURSES FROM ELECTRICAL AND COMPUTER ENGINEERING

ELEC 6851 Introduction to Telecommunication Networks
COEN 7311 Protocol Design & Validation

C09 - COGNATE COURSES FROM ENGINEERING

Students may enroll in any of the following courses, as well as in courses from Engineering Topic Areas E10 and E42, for credit towards the Master of/ Magisteriate in Computer Science and Master of/Magisteriate in Applied Computer Science programs, subject to the provisions set out in the course requirements, providing prerequisite requirements are met:

ENCS 6021 Engineering Analysis II
ENCS 6151 Discrete Optimization
ENCS 6161 Probability and Stochastic Processes
ENCS 6181 Optimization Techniques
ENGR 6111 Graph Theory with System Applications

C10 - PROJECT, SEMINAR AND THESIS

COMP 6951 Software Engineering Case Study (4 credits)
COMP 6961 Graduate Seminar in Computer Science (1 credit)
COMP 7921 Master's Research and Thesis (30 credits)
COMP 7931 Major Report (15 credits)
COMP 7941 Master's Research and Thesis (29 credits)

C11 - DOCTORAL SEMINAR, RESEARCH, AND THESIS

COMP 8011 Doctoral Seminar in Computer Science (**)
(**) Available only to students admitted prior to September 1997.

ENCS 8011 Ph.D. Seminar (2 credits)
ENCS 8511 Doctoral Research Proposal (6 credits)
COMP 8901 Doctoral Research and Thesis (70 credits)

ENCS 8501 Comprehensive Examination
Doctoral students must begin work on ENCS 8501 within 12 (24) months after the first registration as a full-time (part-time) student in a Ph.D. program. This course is graded on a pass/fail basis and has no credit value. For purposes of registration, this work will be designated as ENCS 8501.

C12 - BIOINFORMATICS

COMP 6811 Bioinformatics Algorithms
COMP 6821 Bioinformatics Databases and Systems

F03 – APPLICATION SPECIFIC INTEGRATED CIRCUITS

COEN 6511 ASIC Design
ENCS 6551 Introduction to VLSI Architecture
ENCS 7571 Computational Algorithms for VLSI Design

COURSE DESCRIPTIONS

The following are one-term courses (four credits each) unless otherwise indicated. For additional information concerning course descriptions, prerequisites, and schedules contact the Office of the Associate Dean, Engineering and Computer Science.

Note: Some graduate courses are content equivalent with specific undergraduate courses. These graduate courses, indicated with (*) below, are not available for credit to students who have completed the undergraduate equivalent.

COMP 6231 Distributed Systems Design (4 credits)
Principles of Distributed Computing: Scalability, Transparency, Concurrency, Consistency, Fault Tolerance Distributed Computing Paradigms; Message Passing: Client-Server, Peer-to-Peer: Remote Procedure Call, Remote Method Invocation; Network Services, Object Request Broker, Mobile Agent; Object Space, Collaborative Applications; Distributed Computing Technologies: Inter Process Communication, Sockets, Group Communication, Distributed Objects, RMI, CORBA, Distributed (Internet) applications; HTTP, CGI, Applets, Servelets, Web Services, SOAP. Laboratory: Two hours per week. *Prerequisite*: COMP 5461.

COMP 6281 Computer Systems Design (4 credits)
Migration from Von Neumann to parallel processing architectures: fine grained and coarse grained concurrency, multi-threaded computers, massively parallel computers, fundamental problems in hardware architecture, and memory consistency. Embedding of algorithms on shared-memory and message-passing architectures. Parallel programming environments: parallel programming models, parallel language features, and process mapping. Key concepts in distributed systems. Course project on parallel programming environments. *Prerequisite*: COMP 5461.

COMP 6351 Topics in Scientific Computation (4 credits)
Selected elements of numerical methods that are central to scientific computation. The precise contents of the course may differ somewhat from one offering to the next, but will include several of the following topics: numerical solutions of initial value problems in ordinary differential equations, finite difference method, numerical stability theory, differential algebraic systems, boundary value problems in ordinary differential equations, collocation methods, introduction to the numerical solution of partial differential equations, iterative methods for linear systems, the matrix eigenvalue problem, the singular value decomposition, and the QR factorization. Projects on selected applications. *Prerequisite*: COMP 5611.

COMP 6361 Numerical Analysis of Nonlinear Equations (4 credits)
An introduction to numerical algorithms for nonlinear equations, including discrete as well as continuous systems. The emphasis is on computer-aided numerical analysis rather than numerical simulation. This course is suitable for scientists and engineers with a practical interest in nonlinear phenomena. Topics include computational aspects of: homotopy and continuation methods, fixed points and stationary solutions, asymptotic stability, bifurcations, periodic solutions, transition to chaos, travelling wave solutions, discretization techniques. A variety of applications will be considered. Projects on selected

applications. Numerical software packages will be available. *Prerequisite*: COMP 5611.

COMP 6411 Comparative Study of Programming Languages (4 credits)
Comparison of several high-level programming languages with respect to application areas, design, efficiency, and ease of use. The selected languages will demonstrate programming paradigms such as functional, logical, and scripting. Static and dynamic typing. Compilation and interpretation. Advanced implementation techniques.

COMP 6421 Compiler Design (*) (4 credits)
Compiler organization and implementation. Programming language constructs, their syntax and semantics. Syntax directed translation, code optimization. Run-time organization of programming languages. Project. *Prerequisites*: COMP 5201, 5361, 5511.

COMP 6431 Software Comprehension and Maintenance (4 credits)
The course addresses both technical and managerial views of software comprehension and software maintenance issues. Topics covered in this course include: cognitive models, software visualization, CASE tools, reverse engineering, static and dynamic source code analysis. Introduction to current research topics in software maintenance and program comprehension. *Prerequisite:* COMP 5541, or permission of the instructor.

COMP 6441 Advanced Programming Practices (4 credits**)**
Problems of writing and managing code. Managing complexity: programming process. Pragmatic Programming. Coding conventions, software documentation. Software configuration management. Advanced debugging techniques: program tracing, dynamic inspection and tools. Testing: coding techniques for testing software. Multithreading concurrency and distributed programming. Multi-language programming. Laboratory: two hours per week.

COMP 6461 Computer Networks and Protocols (4 credits)
Direct link networks: encoding, framing, error detection, flow control, example networks. Packet switching and forwarding: bridges, switches. Internetworking: Internet Protocol, routing, addressing, IPv6. End-to-end protocols: UDP, TCP. Network Management: issues, architecture, management information base (MIB), SNMP, TMN and CMIP. Network security concepts. Application-level protocols. Laboratory: Two hours per week. *Prerequisite*: COMP 5461.

COMP 6471 Software Design Methodologies (4 credits)
This course covers the state-of-the-art in architectural design of software systems. The course considers commonly used software system architectures, techniques for designing and implementing these architectures, models and notations for characterizing and reasoning about architectures and design plans. Design methods, object-oriented application frameworks, design patterns,

design quality assurance, coupling and cohesion measurements, design verification and documentation. Assignments include a design project. *Prerequisite*: COMP 5541.

COMP 6481 Systems Requirements Specification (4 credits)
The objectives of the requirement specification process: determining and defining system requirements. Techniques for the identification of requirements. Formal models and representations for specifying system requirements. Formal techniques and tools for requirement specification support. Assessment of a specification for attributes such as correctness, consistency and completeness. Case studies involving large industrial projects in avionics, space mission, and atomic energy control systems will be taken up for an in-depth discussion of safety-critical issues, their specifications, and validation. *Prerequisite*: COMP 5541.

COMP 6491 Systems Software (4 credits)
Fundamental abstractions; architecture and design of the kernel of a contemporary operating system; mainstream commercial and research variants; system programming interfaces; interprocess communications; concurrent and distributed programming interfaces; interprocess communications; concurrent and distributed programming; local and network resources; management of asynchronous events; kernel programming. Software Design Projects. *Prerequisite*: COMP 5461.

COMP 6521 Advanced Database Technology and Applications (4 credits)
Review of standard relational databases, query languages. Query processing and optimization. Parallel and distributed databases. Information integration. Data warehouse systems. Data mining and OLAP. Web databases and XML Active and logical databases, spatial and multimedia data management. Laboratory: Two hours per week. Prerequisite: COMP 5531.

COMP 6531 Foundations of the Semantic Web (4 credits)
Description Web markup languages, World Wide Web Consortium (W3C) standards, extendable markup language (XML) resource description framework (RDF), schema for markup languages, Semantic Web, ontology development, markup languages for ontologies, ontology inference layer (OIL), DARPA agents markup language (DAML), DAML+OIL, ontology web language (OWL), logical foundations of ontologies, frame languages, description logics. A Project.

COMP 6591 Introduction to Knowledge-Base Systems (4 credits)
Review of first-order logic, relational algebra, and relational calculus. Fundamentals of logic programming. Logic for knowledge representation. Architecture of a knowledge-base system. Fundamentals of deductive databases. Top-down and bottom-up query processing. Some important query processing strategies and their comparison. Project or term paper on current research topics. *Prerequisite*: COMP 5531.

COMP 6611 Applications of Symbolic and Algebraic Computation (4 credits)
Selected topics from recent work in the field, such as: minimal vectors in a lattice; multivariate polynomial factorization; computation of Galois groups; computation of integral bases and polynomial factorization over p-adically complete fields. Advanced techniques in symbolic and algebraic computation; computing by homomorphic images and p-adic techniques; algebraic data structures; simplification of algebraic expressions. Students will have access to symbolic/algebraic systems. Project or term paper. *Prerequisites*: COMP 5361, 5511.

COMP 6641 Theory of Computation (4 credits)
General properties of algorithmic computations. Turing machines, universal Turing machines. Turing computable functions as a standard family of algorithms. Primitive recursive functions. Church's thesis, recursive sets. Recursively enumerable sets and their properties. Rice's theorem. Time and space complexity measures. Hierarchy of complexity measures. Axiomatic complexity theory. Project or term paper on selected topic. *Prerequisites*: COMP 5361, 5511.

COMP 6651 Algorithm Design Techniques (4 credits)
Mathematical preliminaries; Empirical and theoretical measures of algorithm efficiencies; Optimization techniques and algorithms including greedy algorithms, dynamic programming, and graph algorithms; Amortized analysis; String matching algorithms; NP-complete problems and approximate solutions; Probabilistic algorithms. Term project. *Prerequisites*: COMP 5361, COMP 5511.

COMP 6661 Combinatorial Algorithms (4 credits)
Representation and generation of combinatorial objects; search techniques; counting and estimation; projects on selected applications from combinatorics and graph theory. *Prerequisites*: COMP 5361, 5511.

COMP 6671 Introduction to Symbolic and Algebraic Computation (*)
(3 credits)
A comparative study of several of the major symbolic mathematics systems. On-line experience with these systems will be offered depending on availability of resources. Detailed study of the implementation of fundamental algorithms and symbolic computation, emphasizing the interplay of numeric and symbolic techniques; univariate polynomial factorization; polynomial remainder sequences and discriminant computation; fast Fourier transform; Chinese remainder theorem; Monte Carlo methods. *Prerequisites*: COMP 5361, 5511.

COMP 6711 Computational Geometry (4 credits)
Efficient algorithms and data structures to solve geometric problems. Problems discussed include convex hulls, line intersections, polygon triangulation, point location, range searching, Voronoi diagrams, Delaunay triangulations, interval

trees and segment trees, arrangements, robot motion planning, binary space partitions, quadtrees, and visitility. Algorithmic methods include plane sweep, incremental insertion, randomization, divide and conquer. Emphasis will be given to computation and complexity, with applications in computer graphics, computer aided design, geographic information systems, networks, mesh generation, databases, and robot motion planning. A project. *Prerequisite*: COMP 5511 or equivalent.

COMP 6721 Introduction to Artificial Intelligence (*) (4 credits)
Scope of AI. Heuristics. Problem solving methodology. Game playing. Reasoning by deduction and induction. Natural language processing. Laboratory: Two hours per week. *Prerequisite*: COMP 5511.

COMP 6731 Pattern Recognition (*) (3 credits)
Sequential and parallel recognition methodologies. Preprocessing. Feature extraction and selection. Syntactic and statistical approaches. Discriminant function. Techniques for learning. Bayesian decision procedures. Neural nets. *Prerequisite*: COMP 5511.

COMP 6741 Introduction to Expert Systems (*) (4 credits)
Basic concepts and techniques. Knowledge representation and inferencing. Building a small expert system. Knowledge engineering and large system development. Survey of tools and expert systems. The expert system market. *Prerequisite*: COMP 5511.

COMP 6751 Human Computer Interface Design (4 credits)
Introduction to human computer interaction. User-centered design process. Analysis of user needs. User modeling. Task analysis. GUI design principles, guidelines and patterns. Tools for user interface prototyping. User interface testing and evaluation. Large project on GUI design, prototyping, and evaluation in a team oriented environment. *Prerequisite*: COMP 5541 or equivalent.

COMP 6761 Advanced 3D Graphics for Game Programming (4 credits)
Fundamental algorithms, techniques, and software engineering principles for 3D graphics. Introduction to real-time graphics application architecture; review of basic 3D concepts of modeling, viewing, and rendering. 3D graphics functions, pipeline, and performance. Hierarchical 3D graphics. Algorithms for occlusion culling, collision detection, photorealism, shadows, and textures. Current trends and state-of-the-art graphics and physics algorithms. Laboratory: Two hours per week. *Prerequisite*: COMP 5511.

COMP 6771 User Interface Development Tools and Techniques (4 credits)
Tools and software for user interface (UI). Event-driven programming. UI frameworks and patterns. OVID Methodology from IBM. Architectures: Seeheim, MVC, PAC, ARCH and AMF. Windowing systems. User interface

management systems (UIMS). Toolkits: callback functions, event handlers, widgets hierarchy, widgets as objects, instantiation of widgets, containers and geometry managers. GUI Builders. Techniques for generating UI. Compound document technologies: OpenDoc, ActiveX, and Java Beans. UI tools for Internet-based applications and PDA (Personal Digital Assistants). End-user programming, customization, and scripting. Course project. *Prerequisite*: COMP 5541 or equivalent.

COMP 6811 Bioinformatics Algorithms (4 credits)
The principal objectives of the course are to cover the major algorithms used in bioinformatics; sequence alignment, multiple sequence alignment, phylogeny; classifying patterns in sequences; secondary structure prediction; 3D structure preduction; analysis of gene expression data. This includes dynamic programming, machine learning, simulated annealing, and clustering algorithms. Algorithmic principles will be emphasized. A project. *Prerequisite*: COMP 5511.

COMP 6821 Bioinformatics Databases and Systems (4 credits)
The principal objectives of the course are to survey the needs of bioinformatics for data management, knowledge management, and computational support; to provide in-depth description of an example of each kind of database and system; and to introduce advanced database technology and software technology relevant to the needs of bioinformatics. A project. *Prerequisite*: COMP 5531.

COMP 691 Topics in Computer Science I (4 credits)
Subject matter will vary from term to term and from year to year. Students may re-register for this course, providing that course content has changed. Changes in content will be indicated by the letter following the course number, e.g., COMP 691A, COMP 691B, etc.

COMP 6951 Software Engineering Case Study (4 credits)
Students will complete a case study of a software project. Whenever possible, the project should be conducted in an industrial environment with the cooperation of the student's employer.

COMP 6961 Graduate Seminar in Computer Science (1 credit)
Students will have to attend a selected set of departmental seminars and submit a comprehensive report on the topics presented in one of the seminars. This course is graded on a pass/fail basis.

COMP 7231 Distributed Computer Systems (4 credits)
Models of distributed systems: topology, synchrony, failure, and buffering. Fundamental concepts: states and events, global consistency, potential-causal ordering, logical clocks, vector clocks, the FLP impossibility theorem. Naming and security. Distributed consensus: atomic commitment, clock synchronization,

replication management, weight-free algorithms. Network algorithms: termination detection, deadlock detection, global snapshots and stable/ unstable predicate detection. High-level specification of distributed applications. Projects will be offered in selected topics in distributed systems. *Prerequisite*: COMP 6281.

COMP 7241 Parallel Algorithms and Architectures (4 credits)
Parallel architectures; memory organization, interconnection structures, data routing techniques. Parallel algorithms; paradigms and design techniques, complexity analysis, algorithms for various computation models. Parallel and distributed programming. Course project on parallel algorithm design and implementation. *Prerequisite*: COMP 6281.

COMP 7251 Mobile Computing and Wireless Networks (4 credits)
Introduction to mobile computing and wireless networks, including impact on other areas such as networks, security, privacy, and databases. Algorithmic issues in channel assignment and handoff, user location and tracker, and routing in ad hoc networks. Discussion of Mobile IP, data management for mobile computing, and wireless LANs. *Prerequisite*: COMP 6461.

COMP 7451 Semantics of Programming Languages (4 credits)
The need for semantic descriptions of programming languages. Classification of semantics: operational, axiomatic, model-theoretic, algebraic, denotational. Classification of languages: procedural, functional, logic, equational. Applications: verification, construction, language design, temporal logic for distributed systems, semantics for advanced languages. *Prerequisite*: COMP 6411.

COMP 7481 Software Verification and Testing (4 credits)
Role of verification, testing and quality assurance. Formal verification techniques. Proving correctness and conformity of system behaviour to Systems Requirement Specification (SRS). Nature and limitations of testing. Nature of hardware and software faults. Formal models of testing. Test environments. Test case generation. Test result analysis. Test standards and documentation. The course includes a project that will develop techniques and strategies for applying formal verification and testing techniques to a problem of industrial size and interest. *Prerequisite*: COMP 6481.

COMP 7521 Cryptography and Data Security (4 credits)
Traditional cryptography. Information theory. Private-key (symmetric-key) and public-key (asymmetric-key) cryptographic algorithms. Advanced Encryption Standard (Rijndael). Cryptographic hash functions. Digital signatures. Data-origin authentication and data integrity. Entity authentication. Key distribution, management, recovery, and exhaustion. Authentication protocols. Security services (confidentiality, authentication, integrity, access control, non-repudiation, and availability) and mechanisms

(encryption, data-integrity mechanisms, digital signatures, keyed hashes, access-control mechanisms, challenge-response authentication, traffic padding, and routing control). Projects will be offered in selected topics in cryptography. *Prerequisites*: COMP 5531, COMP 6651.

COMP 7531 Database Systems Principles (4 credits**)**
Database models. Algebraic, logical, and deductive database languages. Query equivalence and optimization. Query rewriting and information integration. Incomplete information and complex values. Introduction to current research topics. Case study or project on selected topics. *Prerequisite*: COMP 6521.

COMP 7541 Heterogeneous Database Systems (4 credits)
Introduction to levels of heterogeneity. Survey of real-world heterogeneous distributed database systems. Data modelling, query processing and update propagation. Transaction processing and concurrency control schemes. Maintaining semantic integrity, preservation of autonomy, and providing security. Discussion of database heterogeneity in integrated knowledge-base support for software development, CAD and other applications. Project or term paper. *Prerequisite*: COMP 6481 or COMP 6591.

COMP 7551 Advanced Topics in Knowledge-Base Systems (4 credits)
Review of knowledge-base systems; advanced query optimization methods for knowledge-base systems - semantic and structural methods. New directions in knowledge-base systems - temporal, object-oriented, and probabilistic aspects of knowledge representation and processing. Some applications to engineering design, CAD, and VLSI. Project or term paper. *Prerequisite*: COMP 6591.

COMP 7651 Advanced Analysis of Algorithms (4 credits)
Amortized analysis of algorithms, NP-hardness and approximation algorithms, online algorithms, randomized algorithms. Selected topics of current interest. Project or term paper. *Prerequisite*: COMP 6651.

COMP 7661 Advanced Rendering and Animation (4 credits)
Advanced concepts in rendering and animation with emphasis on computational techniques for synthesizing complex realistic images, both static and dynamic. Topics include: overview of computer graphics techniques in games, cinema, and engineering; realistic rendering methods in real time; animation techniques including shape and character animation. A Project. *Prerequisite:* COMP 6761 or equivalent.

COMP 7671 Combinatorial Search Techniques (4 credits)
The purpose of this course is to discuss techniques to design efficient backtrack search programs under the presence of symmetry. Topics will include the estimation of running time of a combinatorial search; heuristic and

isomorphism testing; isomorph rejection; and correctness considerations. Projects on selected applications. *Prerequisite*: COMP 6661.

COMP 7731 Software Usability Testing and Evaluation (4 credits)
Usability requirements techniques for user interfaces. Usability goals/factors specification. Metrics for effectiveness, efficiency and satisfaction. Comparative studies on usability evaluation/testing techniques and tools. Questionnaires, heuristics evaluation, Wizard of Oz. Design of evaluation experiments. Usability in software development lifecycle. Case studies in testing and evaluation of selected GUI and Web user interfaces. Projects on selected applications. *Prerequisite*: COMP 6751.

COMP 7741 Natural Language Interfaces (4 credits)
Introduction to natural language processing. Brief overview of syntax and semantics. Parsing and generation. Differences between spoken and written text. Issues in natural language input such as anaphora, designators, ellipsis, inconsistency, implication. Review of selected NLI systems and Dialog models. Course project. Projects on selected applications. *Prerequisite*: COMP 6751.

COMP 7751 Pattern Recognition and Image Processing (4 credits)
Pattern recognition and image processing techniques, advanced topics in data acquisition and digitization, feature extraction, clustering and classification schemes. Image processing, enhancement, filtering, and evaluation. Projects on selected topics of current interest. Projects on selected applications. *Prerequisite*: COMP 6731.

COMP 7761 Intelligent User Interfaces (4 credits)
Knowledge representation, learning algorithms, reasoning, explanation generation, software agents and multiple agents. Applications of these concepts in the development of intelligent user interfaces. User profiles and their applications to adaptive user interfaces. Project or term paper. *Prerequisite*: COMP 6751.

COMP 7771 Computer Vision (4 credits)
Perspective transformation. Three-dimensional object description. Photogrammetry and stereovision. Reflective map: photometric stereo. Reflective map: shape from shading and texture. Motion field and optical flow. Passive navigation and structure from motion. Reconstruction of images from projections. Advanced image processing techniques and their applications. In the course project, students will implement computer vision algorithms from the literature. *Prerequisite*: COMP 6731.

COMP 791 Topics in Computer Science II (4 credits)
Subject matter will vary from term to term and from year to year. Students may re-register for this course, providing that course content has changed. Changes

in content will be indicated by the letter following the course number, e.g. COMP 791A, COMP 791B, etc.

COMP 7921 Master's Research and Thesis (30 credits)
Students are required to submit a thesis prepared under the guidance of a faculty member appointed by the Faculty Graduate Studies Committee. The thesis must represent the result of the student's independent work undertaken after admission to the program. The thesis will be evaluated by a committee appointed by the Faculty Graduate Studies Committee.
Note: This course is available for students registered in the old option A of the M. Comp. Sc. Program before June 1, 2001.

COMP 7931 Major Report (15 credits)
This course is available only for students registered in the old option B of the Master's program before June 1, 2001. Students taking this course must submit a major report which will be evaluated by two examiners appointed by the Faculty of Graduate Studies Committee.

COMP 7941 Master's Research and Thesis (29 credits)
Students are required to submit a thesis prepared under the guidance of a faculty member appointed by the Faculty Graduate Studies Committee. The thesis must represent the result of the student's independent work undertaken after admission to the program. The thesis will be evaluated by a committee appointed by the Faculty Graduate Studies Committee.
Note: This course is available for students registered in the M. Comp. Sc. Program after June 1, 2001.

COMP 8011 Doctoral Seminar in Computer Science (**)
This course is graded on a pass/fail basis and has no credit value. Students are expected to pass this course before registering for ENCS 8501.
(**) Available only to students admitted prior to September 1997.

COMP 8901 Doctoral Research and Thesis (70 credits)

Diploma in Computer Science

The Department of Computer Science and Software Engineering offers a Diploma program for qualified university graduates from diverse backgrounds who wish to obtain expertise in computer science fundamentals. Graduates of the Diploma program will obtain qualifications similar to those of graduates of the Bachelor of/Baccalaureate in Computer Science program. Upon completion of the Diploma, those with superior academic records who wish to pursue their studies may apply for admission to a 45 credit Master's program in Computer Science.

Admission Requirements. To be considered for admission, applicants must hold a Bachelor's degree with above-average standing, and must have completed COMP 5481 Programming and Problem Solving or equivalent courses in C++ prior to entry into the Diploma program. Equivalence will be determined by the Diploma Program Director. Applicants deficient in mathematics or English are required to make up their deficiencies before they can be considered for admission. The Faculty reserves the right to set a quota on the number of admissions to the program.

Application Deadlines

Applications for admission from within Canada must be complete by May 1 for the Fall term. Applications from outside Canada must be complete by February 15 for the Fall term. There is no admission to this program in the Winter or the Summer term.

Requirements for the Diploma

1. **Credits**. A fully-qualified candidate is required to complete a minimum of 32 credits.

2. **Courses**. Candidates are required to take COMP 5201, 5361, 5421, 5511, 5461, 5531, 5541, and ENCS 5821.

3. **Performance**. Students who have completed at least four courses will be assessed in June of each year. The assessment will be based on creditable courses completed after the first registration in the program. To be permitted to continue, students must have obtained a cumulative grade point average (CGPA) of at least 2.70.

4. **Time Limit**. All work for a diploma program must be completed within 6 terms (2 years) from the time of initial registration in the program for full-time students; for part-time students the time limit is 12 terms (4 years).

5. **Graduation**. To be eligible to graduate, students must have completed course requirements with a CGPA of at least 2.70.

Courses

ENCS 5821 Technical Composition and Communication (4 credits)
Technical writing form and style. Technical and scientific papers, abstracts, reports. Library research and referencing methods. Technical communication using information technology: document processing software, choice of appropriate tools, principles and use of markup languages such as SGML and HTML. Documentation standards. Using Internet facilities for group

collaboration, including the construction of shared hypertext. Configuration management.
Students may be required to attend tutorial writing workshops based on the results of placement tests administered at the start of the course. Lectures: three hours per week. Lab: two hours per week.

COMP 5201 Computer Organization and Assembly Language (4 credits)
Programming in a subset of a suitably chosen assembly language; instruction-set level view of computers; translation of sample high-level language constructs to the instruction-set level. User-level view of the computer system through an operating system. Privileged modes of operation of the hardware for achieving goals such as protection and resource management; the hierarchy of the memory system as a resource, its concepts and requirements. Input/output including interrupt handling.

COMP 5261 Computer Architecture (3 credits)
Classification schemes. Functional units, busing systems and input/output structures, storage systems, instruction sets. Microprogramming. Survey of different kinds of computer architectures. Software influences on architecture. Advanced topics in computer architecture. *Prerequisite*: COMP 5461 previously or concurrently.

COMP 5361 Discrete Structures and Formal Languages (4 credits)
Discrete mathematics: sets, logic, quantifiers, relations, and functions. Regular languages: finite automata (deterministic and non-deterministic), regular expression, regular grammars, pumping lemmas for regular languages, closure properties for regular languages. Context-free languages: context-free grammars, parsing and ambiguity, normal forms for grammars, pushdown automata, closure properties for context free languages.

COMP 5421 Advanced Programming (4 credits)
Designing classes and programs. Program development. Encapsulation; dependency minimization. Inheritance hierarchies; abstract classes and interfaces; frameworks, Reading and writing files; serialization. Applications of inheritance and generics. Design and use of class libraries; user interface design; database and network programming. *Prerequisite*: COMP 5511.

COMP 5461 Operating Systems (4 credits)
Basic concepts of operating systems and system programming. Processes, interprocess communication, and synchronization, memory allocation, segmentation, paging. Resource allocation, scheduling, performance evaluation. File systems, storage devices, I/O systems. Protection, security, and privacy. Advanced operating system concepts: distributed systems, multi-processor and parallel systems, real-time systems. *Prerequisites*: COMP 5201, 5511.

COMP 5481 Programming and Problem Solving (4 credits)
Overview of programming and problem solving. Operators and expressions. Types, values, and variables; type conversion. Classes, objects, and methods. Assignment, conditional and repetitive statements. Arrays. Input and Output. Program structure and organization; encapsulation. Recursion and its uses. Designing classes and member functions; aggregation and inheritance. Introduction to libraries and their applications. Lectures: three hours per week. Tutorial: one hour per week. Lab: 3 hours per week. *Prerequisites:* MATH 204, 205 or equivalent.

COMP 5511 Principles of Data Structures (4 credits)
Definition, use, and application of fundamental data structures and associated algorithms. Asymptotic analysis of algorithms. Storage management: arrays, strings, lists and trees. Data abstraction: stacks, queues, priority queues, sets, and tables. Searching and sorting. Programming techniques: designing classes for data structures. *Prerequisite*: COMP 5481 or equivalent training or experience in Java programming.

COMP 5531 Files and Databases (4 credits)
Introduction to file management: basic file structures and access methods, sequential and indexed-sequential files, B+-trees and R-trees; external sorting; dynamic hashing; clustering techniques. Introduction to database management: fundamental data models - hierarchical, network, and relational; data dependencies; normal forms; and relational database design. Formal query languages: relational algebra, calculus; commercial languages: SQL, QBE. Fundamentals of data processing. *Prerequisites*: COMP 5361, 5511.

COMP 5541 Tools and Techniques for Software Engineering (4 credits)
The software life cycle. IEEE and MIL standards for software documentation. Formal methods. Software architectures. Software design and prototyping. Interfacing and encapsulation. Use of libraries, frameworks, and CASE tools. Implementation and maintenance. Verification and validation. *Prerequisites*: COMP 5361, COMP 5421.

COMP 5611 Elementary Numerical Methods (3 credits)
Error analysis and computer arithmetic. Numerical methods for solving linear systems, Gaussian elimination, LU decomposition. Numerical solution of non-linear equations, fixed point iterations, rate of convergence. Interpolations and approximations, Lagrange polynomials, divided differences, discrete least-square approximation, Legendre polynomials. Numerical integration, Newton-Cotes formulas, Romberg integration. Emphasis will be on the development of efficient algorithms. *Prerequisites*: COMP 5361; COMP 5511.

Changes to the Diploma Program

Students who were admitted to the Diploma program before May 31, 2001 have the choice of either completing the requirements specified in the Graduate Calendar of their year of entry into the Diploma program, or completing the requirements specified in this Calendar.

FACULTY OF FINE ARTS

Dean
CATHERINE WILD

Associate Dean, Research and Graduate Studies
ANA CAPPELLUTO

Associate Dean, Academic and Student Affairs
BRIAN FOSS

Associate Dean, Physical Resources
WOLFGANG KRÖL

Visual Arts Bldg., VA 209
Tel.: 848-2424 ext. 4639; Fax: 848-8627

Art Education

Faculty

Distinguished Professors Emeriti: Stanley Horner, Leah Sherman; ***Professor Emeritus:*** Robert Parker; ***Professors:*** Andrea Fairchild, David Pariser, Elizabeth Saccà; ***Associate Professors:*** Lorrie Blair, Richard Lachapelle *(Chair)*, Paul Langdon *(Graduate Program Director)*, Cathy Mullen; ***Assistant Professor:*** Linda Szabad-Smyth.

Programs

The Department of Art Education offers programs of study leading to the degrees of Doctor of/Doctorate in Philosophy in Art Education and Master of/Magisteriate in Arts in Art Education.

Program Objectives

The Doctor of/Doctorate in Philosophy in Art Education, the only one of its kind in Canada, is designed to offer students advanced study and research training in the teaching of visual arts. Students develop their own research direction in concert with the research and teaching expertise of the graduate faculty. Program course work emphasizes individual development of critical abilities and research practices so that graduates may become leading contributors to the field of art education.

The Master of/Magisteriate in Arts (Art Education) is designed to help students develop a critical understanding of the field of art education, and introduces them to past and current trends, as well as to theories and practices that influence the teaching of visual arts. Students engage in the program of study best suited to their particular academic and professional goals by choosing either the Thesis Option or the Course Option. Graduates go on to a wide range of professional positions in schools, museums and cultural services.

Faculty Research Interests

The Art Education graduate faculty pursue research in a wide range of content areas. These include: development of symbolization and aesthetic response in children; the early development of artists; history of art education; museum education; adult education; multi-cultural and aboriginal issues; women in art and art education; built environment education; response to art; post-modernism; digital technologies and art education. Faculty are involved in the following research methodologies: ethnography; life-history; oral history; action

research; descriptive research; feminist research; video and photographic documentation; community-based video; studio-based inquiry, studio theory and practice.

Application Deadlines. A detailed description of the program may be obtained by writing to the Graduate Program Director, Department of Art Education, Faculty of Fine Arts. Applicants should apply online at: http://welcome.concordia.ca/. The deadline for submitting completed application forms and all supporting documents is March 15. Please note that the application deadline for Concordia University Fellowships is December 15. Entry into the program is in the Fall term only.

Fellowships and Assistantships. Candidates are encouraged to apply for the fellowships and assistantships described in this calendar. Applicants interested in graduate fellowships are advised to consult with the Graduate Awards Office early in the fall to avoid missing fellowship application deadlines which precede the application deadline. Students should indicate their interest on their application form. Assistantships awarded by the department are decided after the graduate admissions date of March 15.

Doctor of/Doctorate in Philosophy (Art Education)

Admission Requirements. The normal requirement for admission is a Master of Arts degree in art education, with superior standing, from a recognized university. A candidate possessing a Master of Fine Arts degree must also complete the art education readings and research methods courses of the Master of/Magisteriate in Arts in Art Education. Applicants must have teaching experience, certification, or related professional experience. This program is recognized by the Quebec Ministry of Education for purposes of *perfectionnement*.

Requirements for the Degree

1. **Credits.** A fully qualified applicant entering the program with a master's degree is required to complete a minimum of 90 credits.

2. **Residence.** The minimum residence requirement for the degree is two years of full-time study or the equivalent in part-time study. One of these residence years may be taken on a part-time basis. The year of full-time study may be the year of writing a dissertation.

3. **Program Advisors and Thesis Supervisors.** Upon admission to the program, each student is assigned to a graduate faculty member, who serves as Program Advisor until the student passes the Comprehensive Examination. After completing the Comprehensive Exam, the student selects a Thesis Supervisor from the available Graduate Program Faculty.

4. **Required Courses.** The program includes 27 credits of course work. Twelve credits in required courses, ARTE 870, 872, 882, and 884, focus on historical, theoretical and methodological aspects of teaching and research in art education. Students select a further 15 credits of course work and independent study in art education and/or relevant disciplines, to complement their research and professional interests. These courses must be approved by the student's program advisor and the Graduate Program Director.

5. **Comprehensive Examination.** Upon completion of a minimum of 21 course credits, each student must pass a comprehensive examination composed of written and oral components. The examination assesses the student's competence in the field of Art Education. The student must pass this exam in order to continue in the program. *A Student Guide to the Comprehensive Examination* gives detailed information on the exam and is available from the department's graduate programs office. Generally, one examination time is established each year, usually at the end of the winter term.

6. **Research and Thesis.** The program includes 63 credits for research and the thesis. A doctoral thesis is expected to make an original contribution to knowledge in the field of art education, and to be written in acceptable scholarly form. For details on thesis procedures and format, see the relevant sections of this calendar and the *Thesis Preparation and Thesis Examination Regulations* available from the School of Graduate Studies. In addition, *Art Education Procedures for Doctoral Theses* is available in the department's graduate programs office.

7. **Admission to Candidacy.** Upon approval of the thesis proposal by the Thesis Advisory Committee, the student is officially admitted to candidacy for the degree.

Academic Requirements

1. **Academic Standing.** Students are expected to earn a grade of *B* or higher in each course in the program. Students should consult the written explanation of the department's rule regarding acceptable academic performance, available in the department's graduate programs office.

2. **C Rule.** Students who receive more than one C grade during the course of their Ph.D. studies will be required to withdraw from the program. Students may appeal for readmission. Students who receive another C after readmission will be required to withdraw from the program and will not be considered for readmission.

3. **F Rule.** Students who receive a failing grade in the course of their Ph.D. studies will be withdrawn from the program. Students may apply for

readmission. Students who receive another failing grade after re-admission will be withdrawn from the program.

4. **Time Limit.** All work for a doctoral degree must be completed within 18 terms (6 years) of full-time study or 24 terms (8 years) of part-time study from the time of original registration in the program.

5. **Graduation Requirement.** In order to graduate, students must have a cumulative GPA of at least 3.00.

Courses

Elective course offerings change from year to year in light of the interests of students and faculty. In any session only those courses will be given for which there is sufficient demand.

ARTE 806 Inquiry Through Art Production (3 credits)
In this course students identify the content and the processes essential to their on-going studio performance. Students are expected to develop parallel inquiry into exhibitions, installations, performances, documentations, notation systems and related readings. Evaluation is based on workshop and seminar participation, studio performance and class presentations. Computer access and shared studio space are available.
This course may be repeated as ARTE 807.

ARTE 850 Selected Topics in Art Education (3 credits)
A seminar course offering students the opportunity to study various aspects of art education. Specific topics vary from year to year to take advantage of the special expertise of the faculty.

ARTE 867 Directed Studies in Art Education I (3 credits)
Independent study in the area of concentration.

ARTE 868 Directed Studies in Art Education II (3 credits)
Independent study in the area of concentration.

ARTE870 Critical Perspectives on Art Education: History, Theory and Practice (3 credits)
A seminar course in which students develop critical reading and writing skills while adding to their understanding of developments past and present that have shaped the field of art education.

ARTE 872 Advanced Critical Analysis (3 credits)
A seminar course in which students develop advanced skills in critical analysis, academic writing and library research. Assignments include compiling and writing a review of literature related to thesis research. Students develop questions related to their area of research and professional interest to be used on their Ph.D. comprehensive examination. *Prerequisite:* ARTE 870.

ARTE 882 Research Practice (3 credits)
A seminar course in which students conduct a small scale research project based on their own research proposal.

ARTE 884 Doctoral Seminar (3 credits)
This course addresses research and communication, thesis writing, and professional practice.

ARTE 890 Research and Thesis (63 credits)
Includes thesis proposal and its approval by the Thesis Advisory Committee, Research (including any further study that may be required to gain needed expertise), written thesis and oral examination. Students are encouraged to periodically present their research-in-progress to academic and professional audiences.

The following courses are cross-listed at the M.A. and Ph.D. levels:

M.A.	**Ph.D.**
ARTE 606	ARTE 806
ARTE 660	ARTE 850
ARTE 670	ARTE 870
ARTE 672	ARTE 872
ARTE 682	ARTE 882

Master of/Magisteriate in Arts (Art Education)

Admission Requirements. A Bachelor of Fine Arts or a Bachelor of Arts with specialization in art education or its equivalent is required. An overall grade average of *B* or better is expected. In addition, the applicant is expected to have had experience in the teaching of art or art-related subjects.

Application Deadlines. Applicants with deficiencies in their undergraduate preparation may be required to take up to 12 credits in prerequisite undergraduate course work. Applicants should apply online at: http://welcome.concordia.ca/. The deadline for submitting completed application forms and all supporting documents is March 15. Please note that the application deadline for Concordia University Fellowships is December 15. Entry into the program is in the Fall term only.

Requirements for the Degree

1. **Credits.** A fully-qualified candidate is required to complete a minimum of 45 credits.

2. **Residence.** The minimum residence requirement is one year (3 terms) of full-time study, or the equivalent in part-time study.

3. **Program Advisors and Thesis Supervisors.** Upon admission to the program, each student is assigned to a graduate faculty member, who serves as Program Advisor. Each student in the Thesis Option selects a Thesis Supervisor and Thesis Advisor Committee from the available Graduate Program Faculty.

4. **Programs of Study.**

Option A
The MA (Art Education) Thesis Option is suitable for students seeking to develop in-depth research expertise, and whose goals include doctoral studies and/or research-oriented professional positions.

12 credits in core Art Education courses: ARTE 670, 672, 680 and 682.
6 credits in Art Education Special Topics courses: ARTE 660 A-Z.
15 credits in elective courses.* May include up to 12 credits in Topics in Studio Inquiry courses: ARTE 606, 607, 608, 609.
12 credits Thesis: ARTE 698. Students may choose from three types of thesis: Scholarly Thesis, Studio Inquiry and Essay, or Teaching Project and Report. All of these require approval of the project by the Thesis Supervisor and Thesis Advisory Committee, and an oral defense.

Option B
The MA (Art Education) Courses Option is suitable for students who seek advanced levels of professional development rather than in-depth training as researchers.

12 credits in core Art Education courses: ARTE 670, 672, 680 and 682.
12 credits in Art Education Special Topics courses: ARTE 660 A-Z
6 credits in Art Education Topics in Studio Inquiry courses: ARTE 606, 607, 608, 609.
15 credits in elective courses.* May include up to 12 additional credits in Topics in Studio Inquiry courses: ARTE 606, 607, 608, 609.

*Elective Courses must be selected in consultation with the Program Advisor and approved by the Graduate Program Director. Some restrictions apply; for more details consult the department.

Academic Regulations

1. **Academic Standing.** Students are expected to complete all courses credited toward the master's degree with a grade of *B* or higher. Under certain conditions one *C* grade may be permitted. Students should consult the written explanation of the department's rule regarding acceptable academic performance, available in the department's graduate office.

2. **C Rule.** Students in research master's/magisteriate programs are allowed to receive no more than one C grade in order to remain in good standing in the university.

3. **F Rule.** Students who receive a failing grade in the course of their studies will be withdrawn from the program. Students may apply for readmission. Students who receive another failing grade after re-admission will be withdrawn from the program.

4. **Time Limit.** All work for a master's/magisteriate degree for full-time students must be completed within 12 terms (4 years) from the time of initial registration in the program at Concordia University; for part-time students the time limit is 15 terms (5 years).

5. **Graduation Requirement.** In order to graduate, students must have a cumulative GPA of at least 3.00.

Courses

Each year required courses and certain electives are offered. Course descriptions and schedules are available in the department's graduate programs office.

ARTE 606 Topics in Studio Inquiry (3 credits)
In this course students identify the content and the processes essential to their on-going studio performance. Students are expected to develop parallel inquiry into exhibitions, installations, performances, documentations, notation systems and related readings. Evaluation is based on workshop and seminar participation, studio performance and class presentations. Computer access and shared studio space are available.
This course may be repeated as ARTE 607, 608, and 609.

ARTE 660 Selected Topics in Art Education (3 credits)
A seminar course offering students the opportunity to study various aspects of art education. Specific topics vary from year to year to take advantage of the special expertise of the faculty.

ARTE 670 Critical Perspectives on Art Education History: History, Theory and Practice (3 credits)
A seminar course in which students develop critical reading and writing skills while adding to their understanding of developments past and present that have shaped the field of art education.

ARTE 672 Advanced Critical Analysis (3 credits)
A seminar course in which students develop advanced skills in critical analysis, academic writing and library research. Assignments include compiling and writing a review of literature on a topic of research or professional interest. *Prerequisite:* ARTE 670.

ARTE 680 Foundations for Inquiry (3 credits)
A seminar course in which students are introduced to the basic concepts, terminology, and contexts of inquiry in art education. Students learn about the practice of systematic inquiry, including: identifying and articulating a topic or question; situating the inquiry within a theoretical framework; relating the inquiry to art education practices; and selecting appropriate inquiry procedures. Each student develops a proposal for a small-scale project related to his/her particular art education interests.

ARTE 682 Research Practice (3 credits)
A seminar course in which students conduct a small-scale research project based on their own research proposal. Students are introduced to appropriate forms and practices for conducting the project and presenting the results. *Prerequisite:* ARTE 680.

ARTE 698 Thesis
The thesis topic is chosen in consultation with the thesis supervisor, and is approved by the thesis advisory committee. Students produce a thesis proposal; conduct the proposed inquiry; produce the thesis; and present it orally to their thesis advisory committee. Guidelines for the thesis are described in *Thesis Preparation and Thesis Examination Regulations* available from the School of Graduate Studies and Art Education's *Master of Arts Thesis Procedures* available from the department's programs office.

Scholarly Thesis (12 credits)
Students develop a scholarly thesis in consultation with the faculty supervisor. The thesis is a minimum of 15,000 words and must address implications for art education. The thesis is presented to the advisory committee for evaluation which includes an oral examination.

Studio Inquiry and Essay (12 credits)
Students develop a cohesive body of artwork for presentation, with the guidance of the faculty supervisor. In the essay (6,000-10,000 words) students address the connections between art-making and art-teaching practices. The

artwork and essay are presented to the advisory committee. Evaluation includes an oral examination on both components.

Teaching Project and Report (12 credits)
Students organize and conduct a professional project directly related to art education, with the guidance of the faculty supervisor. The project may be carried out on site in an educational setting or institution. In the report (6,000-10,000 words) students document, analyze and evaluate the project. Evaluation includes an oral examination on the outcome of the project.

ARTE 664 Independent Study (3 credits)
ARTE 665 Independent Study (3 credits)

Note: M.A. curriculum as presented in this Graduate Calendar went into effect 1997-98.

The following courses are cross-listed at the M.A. and Ph.D. levels:

M.A.	**Ph.D.**
ARTE 606	ARTE 806
ARTE 660	ARTE 850
ARTE 670	ARTE 870
ARTE 672	ARTE 872
ARTE 682	ARTE 882

Discontinued Courses:	**Replaced by:**
ARTE 610	ARTE 670
ARTE 611	ARTE 672
ARTE 681	ARTE 682

EV 2.817
Tel.: 848-2424 ext. 4713; Fax: 848-8627
e-mail: ahgrad@alcor.concordia.ca

Art History

Faculty

Professors: Jean Bélisle, Brian Foss, Loren Lerner *(Chair)*, Catherine MacKenzie *(Graduate Program Director)*, Sandra Paikowsky, Warren Sanderson; ***Associate Professors:*** Kristina Huneault *(Concordia University Research Chair)*, Martha Langford; ***Assistant Professors:*** Elaine Cheasley Paterson, Robert Gifford, Johanne Sloan; *Research Professor and Chair, Gail and Stephen Jarislowsky Institute for Studies in Canadian Art:* François-Marc Gagnon.

Programs

The Department of Art History in the Faculty of Fine Arts offers the degrees of Doctor of/Doctorate in Philosophy in Art History and of Master of/Magisteriate in Arts in Art History, the latter with specialization in the North American context and incorporating a strong theory and method component. Most courses are offered in the late afternoon and evening, making them available to both full-time and part-time students.

Program Objectives

The Ph.D. in Art History was inaugurated in January 1997. It is administered jointly by Concordia University, the Université de Montréal, the Université du Québec à Montréal and Université Laval. Students enroll at the institution at which their thesis supervisor teaches, but do coursework at more than one university. The bilingual nature of the program requires that students understand spoken and written French and English, though they need only speak and write one of these languages. Because of the interuniversity nature of the program, students have access to a wide range of resources and expertise, as well as to diversity of traditional and contemporary methodological approaches to the study of art history. The program concentrates on the study of Western art from the Middle Ages to the present.

The Master of Arts program in Art History was the first one established in Canada devoted to the study and research of Canadian art and art history, and has now expanded to encompass the North American context. The program is directed toward the education of specialists concerned with the practice of art and historical research in the visual arts and architecture. The master's program requires the completion of course work and the production of an original research thesis. It encompasses a wide range of topics including photography, the decorative arts, architecture, sculpture, painting and

drawing, design, the graphic arts, Amerindian and Inuit art and architecture, historiography, methodology and art criticism, and art theory.

Faculty Research Interests

Students are supported in their thesis work by faculty members whose areas of expertise include: Amerindian and Inuit art and architecture, North American architecture, craft, painting, photography and sculpture, as well as other media, from the 17th to the 21st centuries; European art and theory from the Middle Ages to the present; art criticism; cultural studies; feminist and gender studies; industrial archaeology and museum studies.

Doctor of/Doctorate in Philosophy (Art History)

Admission Requirements. Those applying for either full-time or part-time admission must possess a Master of Arts degree or its equivalent in Art History. Applications must include a thesis research project accompanied by a letter of support from the proposed supervisor.

Admission Criteria.
- Quality and pertinence of academic background.
- Feasibility of research in terms of material and faculty resources.
- Ability to understand English and French.

Language Requirements. Since this is a bilingual program, applicants must demonstrate a level of competence that would allow them to read and to follow lectures and discussions in both English and French. The ability to speak and write with facility in both languages is not required; students may participate in discussion, and may write reports, examinations and theses in English or French, as they choose.

Admission Procedures. The interuniversity admissions committee reviews all applications.

Admission Deadlines. A detailed description of the program may be obtained from the Graduate Program Director, Department of Art History. Applicants should apply online at: http://welcome.concordia.ca/. The application deadline is April 1 for September entry and November 1 for January entry. Students applying for financial assistance from the University should submit their documentation before December 15.

Requirements for the Degree

1. **Credits.** A fully qualified candidate entering the program with a master's/magisteriate degree is required to complete 90 credits. These are apportioned as follows: courses and seminars, 12 credits; research tutorial,

6 credits; doctoral forum, 3 credits; comprehensive examination, 9 credits; and thesis, 60 credits.
Typical progress for a full-time student in the program would consist of:

First Year: Block A seminar (6 credits), one seminar from Block B (3 credits), one elective seminar, approved by advisor (3 credits), research tutorial (6 credits).

Second Year: Comprehensive examination (before fifth semester) (9 credits), doctoral forum (3 credits).

Third Year: Thesis (60 credits).

2. **Residency.** The minimum required residency is three consecutive semesters.

3. **Courses**. In order to favour interuniversity exchange and broaden the training of the students enrolled in the program, all courses are open to all students in the program regardless of the university at which they are enrolled. All students must take the Block A seminar (Art History and its Methodologies), one Block B seminar selected from one of six thematic categories under the general heading Art History and its Object, and either another Block B seminar or an M.A. or Ph.D. seminar offered by one of the four universities and approved by the thesis supervisor.

4. **Comprehensive Examinations (ARTH 808).** Before the fifth semester each full-time student must successfully complete an oral and two written examinations, which will be evaluated by a committee consisting of the three professors constituting his/her thesis committee. These examinations are based on a pre-established list of readings focused on theoretical and methodological issues in conjunction with the student's specific area of research. They are intended to verify whether the student is sufficiently prepared to undertake the writing of a thesis. Students who fail these examinations must take them a second time during the following semester. Those failing the second attempt will be withdrawn from the program.

5. **Research Tutorial (ARTH 820).** This activity is directed by the thesis advisor and is oriented to the student's thesis topic. Its objective is to allow the student to articulate a detailed research project, define its corpus, and develop its theoretical and methodological hypotheses with a view to obtaining the approval of the thesis committee. This project, including an activity calendar, must be submitted at the end of the student's first year. Students should register once work is completed and a grade has been assigned.

6. **Doctoral Forum (ARTH 807).** In the interests of promoting the development of an intellectual community within the program, a forum consisting of professors from the program and students engaged in their course work will be invited to present their ongoing research. The forum will be held once each semester during the academic year. Each student, at some point in his/her coursework, must give a paper based on his/her thesis research. This paper will be evaluated by a committee consisting of three professors.

7. **Thesis (ARTH 830)**. The doctoral candidate must submit a thesis which makes an important and original contribution to knowledge in Art History. The thesis is defended orally before a committee composed of five individuals: the thesis advisor, the two other members of the thesis committee, one examiner from a department or program within the university other than the candidate's, and one external examiner from outside the four universities.

Academic Requirements

1. **C Rule.** Students who receive more than one C grade during the course of their Ph.D. studies will be required to withdraw from the program. Students may appeal for readmission. Students who receive another C after readmission will be required to withdraw from the program and will not be considered for readmission.

2. **F Rule.** Students who receive a failing grade in the course of their Ph.D. studies will be withdrawn from the program. Students may apply for readmission. Students who receive another failing grade after re-admission will be required to withdraw from the program and will not be considered for readmission.

3. **Time Limit.** All work for a doctoral degree must be completed within 18 terms (6 years) of full-time study or 24 terms (8 years) of part-time study from the time of original registration in the program.

4. **Graduation Requirement.** In order to graduate, students must have a cumulative GPA of 3.00.

Courses

Block A Seminar: ARTH 800 Art History and Its Methodologies (6 credits)

Block B Seminars: Art History and Its Object

B1: ARTH 801 Periods and Territories (3 credits)
B2: ARTH 802 Classification - Genres, Artistic Disciplines (3 credits)
B3: ARTH 803 Thematic Questions (3 credits)

B4: ARTH 804 **Writings on Art** (3 credits)
B5: ARTH 805 **Critical Examination of Artistic Context** (3 credits)
B6: ARTH 806 **Formal and Semantic Studies** (3 credits)

Master of/Magisteriate in Arts (Art History)

Admission Requirements. A Bachelor of Fine Arts or a Bachelor of Arts degree with a major in Art History or approved equivalent with at least a *B+* average in the major area is required. Applicants with deficiencies in their undergraduate preparation may be required to take a qualifying program prior to formal entry into the program. Qualified applicants lacking prerequisite courses may be required to take up to 12 undergraduate credits in addition to and as part of the regular graduate program.

Application Deadlines. A detailed description of the program may be obtained from the Graduate Program Director, Department of Art History. Applicants should apply online at: http://welcome.concordia.ca/. The application deadline is April 1 for the Fall term and November 1 for the Winter term. Students applying for financial assistance from the University should submit their documentation before December 15.

Requirements for the Degree

1. **Credits**. A fully-qualified candidate is required to complete a minimum of 45 credits.

2. **Residency.** The minimum residency requirement is three terms of full-time study, or the equivalent in part-time study.

3. **Language Requirement.** Reading knowledge of English and French is mandatory. Students are required to pass a examination in their second language, either French or English, prior to graduation.

4. **Courses.** ARTH 655 is a required course for all students. A maximum of 3 credits may be selected from a discipline other than art history with the approval of the graduate program director. The graduate program director or the student's supervisor will assist the student in choosing seminars. Course scheduling is undertaken with the needs of both part-time and full-time students in mind.

5. **Thesis.** Each student must submit a thesis (16000 to 20000 words) prepared under the supervision of a department thesis supervisor who will examine the thesis along with two other scholars.

Academic Regulations

1. **C Rule.** Students in research master's/magisteriate programs are allowed to receive no more than one C grade in order to remain in good standing in the university.

2. **F Rule.** Students who receive a failing grade in the course of their studies will be withdrawn from the program. Students may apply for readmission. Students who receive another failing grade after readmission will be withdrawn from the program.

3. **Time Limit.** All work for a master's/magisteriate degree for full-time students must be completed within 12 terms (4 years) from the time of initial registration in the program at Concordia University; for part-time students the time limit is 15 terms (5 years).

4. **Graduation Requirement.** In order to graduate, students must have a cumulative GPA of at least 3.00.

M.A. Courses

Each year the Department of Art History will offer a selection of courses from those listed below. A list of those courses, as well as information as to the specific content of seminar offerings, will be available from the Art History graduate program office.

ARTH 610 **Selected Issues in North American Art and Architectural History** (3 credits)
ARTH 611 **Industrialization and the Built Environment** (3 credits)
ARTH 612 **Contextualizing North American Sculpture: Topics in History, Theory and Practice** (3 credits)
ARTH 613 **Special Topics in Amerindian and Inuit Art and Art History** (3 credits)
ARTH 614 **Examining the Craft and Artisan Traditions in North America** (3 credits)
ARTH 615 **Issues in Postcolonial Theory in Art and Art History** (3 credits)
ARTH 621 **Collecting and Patronage in Canada** (3 credits)
ARTH 626 **Nationhood and Identity in Canadian Art** (3 credits)
ARTH 627 **Feminism, Art, Art History** (3 credits)
ARTH 632 **Historiography in Canadian Art History** (3 credits)
ARTH 633 **Critical Literature in Canadian Art History** (3 credits)
ARTH 634 **Methodology and the History of Art** (3 credits)
ARTH 635 **Seminar in Canadian Painting** (3 credits)
ARTH 636 **Seminar in Canadian Architecture** (3 credits)
ARTH 638 **Canadian Photography in the North American Context: Selected Topics** (3 credits)

ARTH 647 **Independent Studies in North American Art History** (3 credits)
ARTH 648 **Aspects of Museum Studies: Theories** (3 credits)
ARTH 649 **Aspects of Museum Studies: Practice** (3 credits)
ARTH 655 **Thesis Seminar** (Pass/Fail)
ARTH 656 **Thesis** (24 credits)

Visual Arts Bldg.,VA 264
Tel.: 848-2424 ext. 4790; Fax: 848-4969

Creative Arts Therapies

Faculty

Associate Professors: Josée Leclerc *(Chair)*, Stephen Snow *(DT Option, Program Coordinator)*, Denise Tanguay *(AT Option, Program Coordinator and Faculty Advisor)*; ***Assistant Professors:*** Louise Lacroix *(AT Practicum Coordinator)*, Suzanne Lister *(AT Option Faculty Advisor)*, Yehudit Silverman *(DT Practicum Coordinator)*; ***Adjunct Associate Professors:*** Irene Gericke, Leland Peterson.

Program

The Department of Creative Arts Therapies offers a program of study with options of specialization in Art Therapy and Drama Therapy, leading to the degree of Master of/Magisteriate in Arts in the Creative Arts Therapies.

Faculty Research Interests

Creative Arts Therapies content areas include: art psychotherapy, mental health, identity and trans-cultural issues; rehabilitation through art and drama; sandplay therapy; guided imagery in music; assessment design; creative arts therapies; narrative therapy; art and psychoanalysis (post modern theory, French School of Thought); creative process; myth and story in therapy; and therapeutic performance.

Art Therapy Option

Program Objectives

The Master of/Magisteriate in Arts with a specialization in Art Therapy is the only full professional training program in Quebec and Canada. It is recognized by the American Art Therapy Association (AATA), as an approved training program.

General Aims of the Art Therapy Option. The program is designed to offer intensive preparation for a high level of professional competence in the use of the visual arts for therapeutic, preventive, and associated research purposes. The program educates and trains art therapists to function as competent professionals within their field, while maintaining a strong sense of ethical and social responsibility.

Academic Aims. The program aims to provide students with a thorough understanding of the historical and theoretical foundations of art therapy via

personal investigation and direct experience of the creative/ therapeutic processes and their interrelationships. The student acquires skills in the practice of psycho-dynamically oriented art therapy through the practicum and study of alternative theories of art therapy, as developed by leading practitioners. It is worth noting that issues arising in the practicum setting frequently constitute a basis for research and theoretical formulations.

Application. As of Winter 2005, applicants must apply on-line at http://welcome.concordia.ca/. Additional forms for the Art Therapy Option, along with detailed instructions, can be obtained by visiting http://art-therapy.concordia.ca. Portfolios are to be submitted directly to the Department of Creative Arts Therapies.

Application Deadline. Completed applications, including all supporting documents, must be submitted to the Graduate Admissions Application Centre by January 15. However, if also applying for a fellowship, the deadline becomes the preceding December 15. Admission is for the Fall term only.

Fellowships and Assistantships. Candidates are encouraged to apply for the fellowships and/or assistantships described in this calendar. Applicants interested in graduate fellowships are advised to consult with the Graduate Awards Office at the start of the Fall term to avoid missing fellowship application deadlines. Applications for assistantships awarded by the department begin only once students have been selected for admission in the Fall and when information on availability and procedures is sent in June.

Admission Requirements. Entry into the program requires a bachelor's/ baccalaureate degree with courses in Studio Arts (30 credits), Psychology/ Applied Social Sciences (30 credits), including courses in Introductory, Developmental and Abnormal Psychology, Theories of Personality, and Strategies of Inquiry), Art Education (6-12 credits), Art History (6 credits) and Introduction to Art Therapy (3 credits), or approved equivalence. Applicants should note that enrolment is limited and places offered are based on a past academic record of no less than a B average, a 500-word letter of intent and three letters of recommendation. Applicants should submit a portfolio of up to 22 slides, presented in an 8 1/2" x 11" plastic pocket or choose to submit digital pictures of their work on CD; all to be clearly identified to the name of the applicant. Direct experience with the therapeutic process is highly recommended. Previous work experience in a clinical, rehabilitative or educational setting is expected.

Master of/Magisteriate in Arts (Art Therapy Option)

Requirements for the Degree

1. **Credits**. A fully-qualified candidate is required to complete 60 credits.

2. **Residence**. The minimum residence requirement is two years (5 terms) of full-time study, or the equivalent in part-time study.

3. **Courses**. All students are required to take the following core courses (each worth 3 credits, unless otherwise specified): ATRP 600, ATRP 602, ATRP 603, ATRP 604, CATS 610, CATS 611, ATRP 613, ATRP 614, ATRP 620, ATRP 623, ATRP 624, ATRP 630, CATS 639 (1 credit), CATS 641 (1 credit), CATS 643 (1 credit), CATS 691, ATRP 693. Six additional elective credits, to be chosen in consultation with a faculty advisor, are required of all candidates. With the approval of the Chair of the Department of Creative Arts Therapies and that of the cooperating department, some or all of the elective credits may be chosen from other graduate programs in the Faculty of Fine Arts, in other faculties, or at other universities.

   Additionally, students choose to enter one of two streams of research in the program containing the following requirements:

   Research Paper - **CATS 689**: Research Paper (9 credits)
   OR
   Applied Research Project - **CATS 698**: Applied Research Project with Report (6 credits) and **CATS 699**: Comprehensive Exam (3 credits).

4. **Practicum**. In addition to the credit requirements, each student must successfully complete a minimum of 800 hours in the practice of art therapy under faculty supervision in an approved practicum setting. Since the program emphasizes experience with individual, group and family formats for therapeutic interventions, normally, a student will not work with the same client population during the first and second year of the practicum. Policies and procedures pertaining to the supervisory and practicum experiences are available in the administrative office of the Department of Creative Arts Therapies.

5. **Research Paper - CATS 689**. The research paper represents the formal culmination of graduate studies in the Creative Arts Therapies. This paper includes a literature review and may also include methodology, specific procedures, research population or sample, data collection, and treatment of the data, as appropriate to the topic approved by the Creative Arts Therapies Faculty Research Advisory Committee. Students develop their proposals for submission to this committee as a course requirement for CATS 691. The required research courses CATS 691 and ATRP 693 ensure the students' knowledge of specific research methodologies.

6. **Applied Research Project with Report and Comprehensive Exam - CATS 698 and CATS 699**. The student chooses this project to further explore specific pilot project reports, feasibility studies and research with

artistic, photographic or video documentation relevant to the creative arts therapies. All applied projects must also have a written component, and be presented by each student as a public seminar, upon completion. An oral/written comprehensive case study examination must be taken to demonstrate integrative aspects of learning and knowledge in the study of art therapy.

7. **Language Requirements**. While there are no formal language requirements, students intending to work in Quebec are strongly encouraged to develop a working knowledge of French.

Academic Regulations

1. **Academic Standing**. Students are expected to complete all courses credited toward the master's/magisteriate degree with a grade of B or higher.

2. **C Rule.** Under certain conditions, one C grade may be permitted. Students should consult the written explanation of the Graduate Studies' guidelines regarding acceptable academic performance, available at the Department of Creative Arts Therapies.

3. **F Rule.** Students who receive a failing grade in the course of their studies will be withdrawn from the program. Students may apply for re-admission, but will be withdrawn from the program if they receive another failing grade after re-admission.

4. **Time Limit**. All work for a master's/magisteriate degree for full-time students must be completed within 12 terms (4 years) from the time of initial registration in the program at Concordia University; for part-time students, the time limit is 15 terms (5 years).

5. **Graduation Requirement.** In order to graduate, students must have obtained a cumulative GPA of at least 3.00.

Courses

ATRP 600 Readings in Art Therapy (3 credits)
This course involves a study of the historical development of Creative Arts Therapies concepts and an examination of contemporary practice. Links will be developed between historical and contemporary practice in art therapy, clinical psychology, psychotherapy and psychiatry. Art therapy literature will be examined for its connection to the works of Freud, Jung, Winnicott, Kohut, Rogers and other important theorists in clinical psychology. Students complete readings, participate in seminars, make presentations and develop a course paper based on their investigation of an approved topic.

ATRP 602 Assessment Techniques in Art Therapy (3 credits)
This course emphasizes an understanding of the process of assessment. Students view assessments, read and discuss relevant theory and enhance their skills in observation and inference-making. Distinctions are made between art therapy roles, clinical techniques and tools of art therapists and those of other health professionals. Students conduct and present an art therapy assessment.

ATRP 603 Symbolic Imagery and Art Therapy - Studio/Workshop (3 credits)
Students develop an understanding of art therapy methodology through the exploration of individual personal imagery. Psychoanalytic, existentialist, humanist, gestalt, and cognitive behavioural theories are examined for their applications to imagery in art therapy.

ATRP 604 Group and Family Art Therapy (3 credits)
This course presents a dialectical, experiential and practical presentation of a variety of theories and techniques in family and group dynamics, specific to the practices of art therapy.

CATS 609 Inter-related Creative Arts Therapies (3 credits)
Students are introduced to a modality in the creative arts therapies other than their specialization. Course objectives aim to enhance the students' creative repertoire by introducing the concepts and techniques utilized in that modality's field, rather than to provide professional training in the specialized discipline.

CATS 610 Introduction to Topics in Clinical Psychology for Creative Arts Therapists (3 credits)
A seminar introducing the creative arts therapists to the various psycho-pathologies, their symptomatologies, etiologies, and treatments. Through readings, discussions, and presentations, a survey of theoretical positions is offered with emphasis on psycho-dynamic and cognitive-behavioural approaches.
Note: Credit received for CATS 610 cannot be applied towards a graduate program in Psychology.

CATS 611 Counselling Skills for Creative Arts Therapists (3 credits)
Teaching in clinical skills and role-play exercises provide the students with an understanding of non-directive and directive counselling techniques in general, and as applied to the special needs of the populations encountered in practicum experiences. Listening skills, paraphrasing, reflection, the use of questions, confrontation, interpretation, assessment interviewing and crisis intervention are demonstrated, discussed and practiced in relation to individual and group processes.

ATRP 613 Art Therapy Practicum Supervision I (3 credits)
This course introduces the practice of art therapy. Under faculty supervision, students choose a clinical or special-educational setting. In individual and group supervisory sessions, students present case material and assessments and discuss clinical issues and their implications in psychotherapy processes. Ethical issues related to clinical practice are addressed. Students document their practical experience through initial intake reports and charting, by interviewing clients, as well as working with a multi-disciplinary team at a clinical site. Assessment is based upon a required paper, contribution to supervisory sessions and the successful completion of the practicum (150 hours).

ATRP 614 Art Therapy Practicum Supervision II (3 credits)
Prerequisite: ATRP 613.
This course is a continuation of Art Therapy Practicum Supervision I (200 hours).

CATS 615 Independent Practicum in the Creative Arts Therapies (3 credits)
Prerequisites: ATRP 613, 614.
Additional practicum experience is offered on an individual basis to students in special circumstances with the Department's approval and in agreement with a faculty supervisor. A case study is required.

ATRP 620 Art Therapy Skills: Special Problems (3 credits)
This is a seminar/workshop course designed to further explore psychodynamically oriented therapeutic issues which students encounter during their fieldwork. Through role-playing, each seminar focuses on exchanging ideas on the theoretical and practical aspects of specific client problems in child, adolescent, adult, family and/or group art therapy sessions. Each student is expected to explore at least two client sessions through role-playing with the use of simulated artwork in the actual seminar class. In addition to assessing the client's progress in therapy, problematic issues may include resistance, transference and counter-transference, use of appropriate art materials and media, the effects of wording in the therapist's comments, and/or the pacing of the therapeutic process.

ATRP 623 Advanced Art Therapy Practicum Supervision I (3 credits)
Prerequisites: ATRP 613, 614.
The students' objectives in the practicum are to facilitate psychological growth and independence in clients through art. Students are expected to combine their understanding of Creative Arts Therapies concepts with the cultivation of professional skills via practice. Weekly group and individual supervision seminars consist of case presentations and group discussions of assessments, immediate and long-term goals and alternate approaches to realizing these objectives. Students are expected to deepen their understanding of intra/interpersonal psychodynamics, of psychotherapeutic processes, and of ethical issues in clinical practice. They are also expected to participate in

multidisciplinary teams, to demonstrate initiative and to have a grasp of major theoretical issues. In case presentations, students are expected to progress to the use of technical language, where appropriate. A minimum of 200 practicum hours is expected.

ATRP 624 Advanced Art Therapy Practicum Supervision II (3 credits)
Prerequisites: ATRP 613, 614, 623.
By this stage of their training, students in the master's/magisteriate program are expected to initiate treatment programs (in collaboration with colleagues) by using a variety of media and assessing their effectiveness, participating in case presentations, writing cogent and concise reports and being able to institute termination strategies. Ethical issues related to clinical practice are addressed. While continuing to deepen their analysis of art therapy products and processes in relation to the psychotherapeutic process, students should begin to approach art therapy from a critical standpoint and to consider the appropriateness of its implementation within a number of treatment models for each case. The student is expected to make a case presentation involving the assessment procedures of case history, diagnostic considerations, the course of art therapy, and a discussion of specific issues and questions central to the case in which relevant theoretical and research data is integrated. A minimum of 250 practicum hours is expected.

ATRP 630 Child and Adolescent Art Therapy (3 credits)
In a seminar/lecture format, *the child* is viewed from several psychological perspectives with respect to art therapy. Areas explored include: a review of developmental stages and their relationship to graphic expression; an examination of relevant clinical issues including defenses and sublimation; the role of play; childhood and adolescent narcissism and the therapist's role. Assessment of the child client's progress is reviewed.

CATS 631A Selected Issues in the Creative Arts Therapies (3 credits)
This course may be repeated as CATS 631B, 631C, etc.

CATS 636 Independent Studies in Creative Arts Therapies (3 credits)
This course may be repeated as CATS 637.

CATS 638 Creative Process in Clinical Practice for Creative Arts Therapists (3 credits)
Students explore the value of the creative process as a model for therapeutic intervention for both the client and the therapist. Students engage in creative projects and monitor their own creative process. Through readings, discussion, and creative experiences with different mediums, students learn to be able to articulate, and evaluate clinical practice within a creative process framework.

CATS 639 Interdisciplinary Topics: Cross-Cultural Issues in the Creative Arts Therapies (1 credit)
This course involves a multi-modal inquiry of cross-cultural issues. Students explore problems and opportunities that arise in clinical practice within an environment of cultural diversity. Approaches used in the exploration of the topic emphasize the integration of the arts.

CATS 640 Studio Media and Practice for Creative Arts Therapists (3 credits)
Students develop skills with a variety of studio media and processes in their own creative arts discipline, while experiencing the media and creative process of an allied discipline. Commonalities and factors unique to each are examined for their potential in interdisciplinary practice.

CATS 641 Interdisciplinary Topics: Ethics in Clinical Practice in the Creative Arts Therapies (1 credit)
This course covers ethical standards for clinical practice in the creative arts therapies and ethical guidelines for mental health counselors, as established by professional organizations. Students learn about ethical decision-making through readings and role-play.
Note: Students who have received credit for CATS 642 may not take this course for credit.

CATS 643 Interdisciplinary Topics: Ethics in Research in the Creative Arts Therapies (1 credit)
This course covers ethical standards for research in the creative arts therapies and ethical guidelines for mental health counselors, as established by professional organizations. Students learn about ethical decision-making through readings and role-play.
Note: Students who have received credit for CATS 642 may not take this course for credit.

CATS 645 Family Systems and the Creative Arts Therapies (3 credits)
Family systems theory is introduced and specific theories and practices of family therapy are considered. Indications for the use of family therapy and for the integration of family therapy and the creative arts therapies are explored, as are specific methods of assessment and intervention.

CATS 689 Research Paper (9 credits)
Prerequisite: CATS 691.
The research paper is the formal culmination of graduate studies in the Creative Arts Therapies. This paper includes a literature review, and may also include methodology, specific procedures, research population or sample, data collection, and treatment of the data as appropriate to the topic approved by the Creative Arts Therapies Faculty Research Advisory Committee. Students develop their proposals for this paper as a course requirement for CATS 691 Research in the Creative Arts Therapies, to be submitted for approval to the

Faculty Research Advisory Committee in the winter term of their first year in the program. The Committee will then assign one faculty member in the department to supervise each paper. This nine-credit component appears on the student record only once the final version of the Research Paper has been submitted to the Thesis Office and the Graduate Grade Activity Report Form, granting a grade of PASS, has been submitted to the Office of the Registrar.

CATS 691 Research in the Creative Arts Therapies (3 credits)
This course presents an overview of research, theory and practice. Creative arts processes and psychopathology in the context of development models and theories, including those of the psychoanalytic, humanist/existential and cognitive/behavioural schools are examined. Research designs, methods and strategies, instrumentation and measurement, statistical techniques and data analysis are presented. Ethical issues involved in research are addressed. Students are required to develop proposals for their research paper, which is to be completed in their second year, in fulfilment of CATS 689 credits.

ATRP 693 Research in Art Therapy (3 credits)
Prerequisite: CATS 691.
Various research models specific or adapted to the discipline of art therapy are presented from conceptualization to implementation, to aid students in the development of their research papers or special projects in art therapy. Ethical issues specific to research in art therapy are addressed.

CATS 698 Applied Research Project with Report (6 credits)
The student chooses this option to further explore specific pilot project reports, feasibility studies and creative research designs utilizing media intrinsic to the creative arts therapies. All applied projects, to be presented as a public seminar upon completion, must also have a written component.

CATS 699 Comprehensive Exam (3 credits)

Drama Therapy Option

Program Objectives

The Master of/Magisteriate in Arts with a specialization in Drama Therapy is the only full professional training program in Quebec and in Canada. The program – designed according to the current philosophy and standards of education within the discipline of drama therapy – has obtained approved educational status by the only granting professional association for North America, the National Association for Drama Therapy (NADT), based in the United States.

General Aims of the Drama Therapy Option. The program is designed to offer intensive preparation for a high level of professional competence in the use of

drama for therapeutic and preventive purposes, for fostering an expressive, creative dimension in the lives of persons with special needs, and for associated research. The program educates and trains drama therapists to function as competent professionals within their own field, and as members with skills in team practice in the creative arts therapies, while maintaining a strong sense of ethical and social responsibility.

Academic Aims. The program aims to provide students with a thorough understanding of the history, methods and theoretical foundations of drama therapy. Investigation of the interrelationship between drama/theatre and therapeutic processes is approached through experiential and didactic learning methods. The student acquires skills in drama therapy through their practicum and the study of theories of drama therapy, as developed by leading North American and international practitioners. Students are encouraged to develop theoretical formulations pertaining to issues arising in practicum settings as a basis for their research.

Application. As of Winter 2005, applicants must apply on-line at http://welcome.concordia.ca/. Additional forms for the Drama Therapy Option, along with detailed instructions, can be obtained by visiting http://art-therapy.concordia.ca. Documentation of the applicant's involvement in drama and theatre is to be submitted directly to the Department of Creative Arts Therapies.

Application Deadline. Completed applications, including all supporting documents, must be submitted to the Graduate Admissions Application Centre by January 15. However, if also applying for a fellowship, the deadline becomes the preceding December 15. Admission is for the Fall term only.

Fellowships and Assistantships. Candidates are encouraged to apply for the fellowships and/or assistantships described in this calendar. Applicants interested in graduate fellowships are advised to consult with the Graduate Awards Office at the start of the Fall term to avoid missing fellowship application deadlines. Applications for assistantships awarded by the department begin only once students have been selected for admission in the Fall and when information on availability and procedures is sent in June.

Admission Requirements. Entry into the program requires a bachelor's/ baccalaureate degree with courses in Theatre (30 credits or equivalent), Psychology (18-24 credits or equivalent) which must include: Introductory, Developmental, and Abnormal Psychology, Theories of Personality, a research related course to be approved by a faculty advisor, and Introduction to Drama Therapy. Applicants should note that enrolment is limited and places are offered on the basis of a past academic record of no less than a B average, a 500-word letter of intent and three letters of recommendation. Applicants should submit documentation, which may include video material of their involvement

in drama and theatre. The documentation may include video material. Previous work experience in a clinical, rehabilitative or educational setting is also expected. Experience in one's own therapy is highly recommended.

Master of/Magisteriate in Arts (Drama Therapy Option)

Requirements for the Degree

1. **Credits**. A fully-qualified candidate is required to complete 60 credits.

2. **Residence**. The minimum residence requirement is two years (5 terms) of full-time study, or the equivalent in part-time study.

3. **Courses**. All students are required to take the following core courses (each worth 3 credits, unless otherwise specified): DTHY 600, DTHY 603, DTHY 604, CATS 610, CATS 611, DTHY 613, DTHY 614, DTHY 623, DTHY 624, CATS 639 (1 credit), CATS 641 (1 credit), CATS 643 (1 credit), DTHY 643, DTHY 644, DTHY 645, CATS 691, DTHY 693. Six additional elective credits, to be chosen in consultation with a faculty advisor, are required of all candidates. With the approval of the Chair of the Department of Creative Arts Therapies and that of the cooperating department, some or all of the elective credits may be chosen from other graduate programs in the Faculty of Fine Arts, in other faculties, or at other universities.

   Additionally, students choose to enter one of two streams of research in the program containing the following requirements.

   Research Paper - **CATS 689:** Research Paper (9 credits)
   OR
   Applied Research Project - CATS 698: Applied Research Project with Report (6 credits) and **CATS 699:** Comprehensive Exam (3 credits).

4. **Practicum**. In addition to the credit requirements, each student must successfully complete a minimum of 800 hours in the practice of drama therapy under faculty supervision in an approved practicum setting. Normally, a student will not work with the same client population in the first and second year of the practicum. Policies and procedures pertaining to the supervisory and practicum experiences are available at the administrative office of the Department of Creative Arts Therapies.

5. **Research Paper - CATS 689**. The research paper represents the formal culmination of graduate studies in the Creative Arts Therapies. This paper includes a literature review and may also include methodology, specific procedures, research population or sample, data collection, and treatment of the data as appropriate to the topic approved by the

Creative Arts Therapies Faculty Research Advisory Committee. Students develop their proposals for submission to this committee as a course requirement for CATS 691. The required research courses CATS 691 and DTHY 693 ensure the students' knowledge of specific research methodologies.

6. **Applied Research Project with Report and Comprehensive Exam - CATS 698 and CATS 699**. The student chooses this project to further explore specific pilot project reports, feasibility studies and research with performance, photographic or video documentation relevant to the creative arts therapies. All applied projects must also have a written component, and be presented by each student as a public seminar upon completion. An oral/written comprehensive case study examination must be taken to demonstrate integrative aspects of learning and knowledge in the study of drama therapy.

7. **Language Requirements**. While there are no formal language requirements, students intending to work in Quebec are strongly encouraged to develop a working knowledge of French.

Academic Regulations

1. **Academic Standing**. Students are expected to complete all courses credited toward the master's/magisteriate degree with a grade of B or higher.

2. **C Rule.** Under certain conditions, one C grade may be permitted. Students should consult the written explanation of the Graduate Studies' guidelines regarding acceptable academic performance, available at the office of the Department of Creative Arts Therapies.

3. **F Rule.** Students who receive a failing grade in the course of their studies will be withdrawn from the program. Students may apply for re-admission, but will be withdrawn from the program if they receive another failing grade after re-admission.

4. **Time Limit**. All work for a master's/magisteriate degree for full-time students must be completed within 12 terms (4 years) from the time of initial registration in the program at Concordia University; for part-time students, the time limit is 15 terms (5 years).

5. **Graduation Requirement.** In order to graduate, masters' students must have obtained a cumulative GPA of 3.00.

Courses

DTHY 600 Current Approaches to Drama Therapy (3 credits)
The theory and practice of drama therapy is explored through readings, discussions and experiential workshops, focusing on several current approaches in the field. Perspectives and methods from American, British and Canadian drama therapists such as Emunah, Landy, Johnson, Jennings, Gersie, Jones, Cattanach, MacKay and others, are examined. Drama therapy literature will also be investigated for its connections to other theorists in clinical psychology and psychiatry, including Freud, Moreno, Winnicott, and White.

DTHY 603 Improvisation and Drama Therapy - Studio/Workshop (3 credits)
Development of the skills, methods and dynamics of improvised dramatic play, with a focus on spontaneity, containment and the relationship between feeling and aesthetic form.

DTHY 604 Drama Therapy and Groups (3 credits)
A survey and comparison of major theoretical approaches to group therapy is explored through seminars and experiential learning situations specific to the practices of drama therapy.

CATS 609 Inter-related Creative Arts Therapies (3 credits)
Students are introduced to a modality in the creative arts therapies other than their specialization. Course objectives aim to enhance the student's creative repertoire by introducing the concepts and techniques utilized in that modality's field, rather than to provide professional training in the specialized discipline.

CATS 610 Introduction to Topics in Clinical Psychology for Creative Arts Therapists (3 credits)
A seminar introducing the creative arts therapists to the various psycho-pathologies, their symptomatologies, etiologies, and treatments. Through readings, discussions, and presentations, a survey of theoretical positions is offered with emphasis on psycho-dynamic and cognitive-behaviourial approaches.
Note: Credit received for CATS 610 cannot be applied towards a graduate program in Psychology.

CATS 611 Counselling Skills for Creative Arts Therapists (3 credits)
Teachings in clinical skills and role-play exercises provide the students with an understanding of non-directive and directive counselling techniques in general, and as applied to the special needs of the populations encountered in practicum experiences. Listening skills, paraphrasing, reflection, the use of questions, confrontation, interpretation, assessment interviewing and crisis intervention are demonstrated, discussed and practiced in relation to individual and group processes.

DTHY 613 Drama Therapy Practicum Supervision I (3 credits)
Students are provided with opportunities to observe and/or participate in drama therapy sessions within a variety of settings including primary and secondary schools, daycare centres, hospitals, clinics, community centres, prisons, and homes for older adults, which are led or supervised by accredited practitioners in the field. Group supervisory time includes practical presentations and role-playing to promote the development of students' counselling skills and understanding of the psychotherapeutic process. Non-directive and directive counselling techniques specific to drama therapy are introduced and practiced, and their applications explored with regards to special populations, assessment interviews, brief and long-term counselling, and crisis intervention. Ethical issues related to clinical and community practices are addressed. A minimum of 150 practicum hours is expected.

DTHY 614 Drama Therapy Practicum Supervision II (3 credits)
Prerequisite: DTHY 613.
Drama therapy practica with a variety of populations from primary and secondary schools, daycare centres, hospitals, clinics, community centres, prisons, homes for older adults and rehabilitation centres take place under the supervision of an accredited drama therapist. Students engage in client assessment and examine the psychotherapeutic processes at work in drama therapy case material. Ethical issues related to clinical and community practices are addressed. The practica credits are inclusive of close group and individual supervision of the students' work. A minimum of 200 practicum hours is expected.

CATS 615 Independent Practicum in the Creative Arts Therapies (3 credits)
Prerequisites: ATRP 613, 614.
Additional practicum experience is offered on an individual basis to students in special circumstances with the Department's approval and in agreement with a faculty supervisor. A case study is required.

DTHY 623 Advanced Drama Therapy Practicum Supervision I (3 credits)
Prerequisites: DTHY 613, 614.
The students' objectives in the practicum are to facilitate psychological growth and independence in clients through drama. Students are expected to combine their understanding of drama therapy concepts with the cultivation of professional skills via practice. Weekly group and individual supervision seminars consist of case presentations and group discussions of immediate and long-term goals and alternate approaches to realizing these objectives. Students are expected to deepen their understanding of intra/interpersonal psychodynamics, of the psychotherapeutic process, and of ethical issues in clinical and community practice. They are expected to participate in multi-disciplinary teams, to demonstrate initiative and to have a grasp of major theoretical issues. In case presentations, students are expected to progress to the

use of technical language, where appropriate. A minimum of 200 practicum hours is expected.

DTHY 624 Advanced Drama Therapy Practicum Supervision II (3 credits)
Prerequisites: DTHY 613, 614, 623.
By this stage of their training, students in the master's/magisteriate program are expected to initiate programs (in collaboration with colleagues), by using a variety of drama therapy methods and assessing their effectiveness, participating in case presentations, writing cogent and concise reports and being able to institute strategies for closure. While continuing to deepen their analysis of drama therapy techniques in relation to the psychotherapeutic process, students should also begin to approach drama therapy theory from a critical standpoint and consider the appropriateness of its methodologies to specific cases. Ethical issues in clinical and community practice are addressed. A minimum of 250 practicum hours is expected.

CATS 631A Selected Issues in the Creative Arts Therapies (3 credits)
This course may be repeated as CATS 631B, 631C, etc.

CATS 636 Independent Studies in Creative Arts Therapies (3 credits)
This course may be repeated as CATS 637.

CATS 638 Creative Process in Clinical Practice for Creative Arts Therapists (3 credits)
Students explore the value of the creative process as a model for therapeutic intervention for both the client and the therapist. Students engage in creative projects and monitor their own creative process. Through readings, discussion, and creative experiences with different mediums, students learn to be able to articulate, and evaluate clinical practice within a creative process framework.

CATS 639 Interdisciplinary Topics: Cross-Cultural Issues in the Creative Arts Therapies (1 credit)
This course involves a multi-modal inquiry of cross-cultural issues. Students explore problems and opportunities arising in clinical practice in an environment of cultural diversity. Approaches used in the exploration of the topic emphasize the integration of the arts.

CATS 640 Studio Media and Practice for Creative Arts Therapists (3 credits)
Students develop skills with a variety of studio media and processes in their own creative arts discipline, while experiencing the media and creative process of an allied discipline. Commonalities and factors unique to each are examined for their potential in interdisciplinary practice.

CATS 641 Interdisciplinary Topics: Ethics in Clinical Practice in the Creative Arts Therapies (1 credit)
This course covers ethical standards for clinical practice in the creative arts therapies and ethical guidelines for mental health counselors, as established by professional organizations. Students learn about ethical decision-making through readings and role-play.
Note: Students who have received credit for CATS 642 may not take this course for credit.

CATS 643 Interdisciplinary Topics: Ethics in Research in the Creative Arts Therapies (1 credit)
This course covers ethical standards for research in the creative arts therapies and ethical guidelines for mental health counselors, as established by professional organizations. Students learn about ethical decision-making through readings and role-play.
Note: Students who have received credit for CATS 642 may not take this course for credit.

DTHY 643 Sociodrama and Psychodrama (3 credits)
The practices of sociodrama and psychodrama are examined for their use as treatment modalities in drama therapy. Seminars and experiential methods of instruction integrate their practice into the aims and principles of drama therapy.

DTHY 644 Drama Therapy Methods, Processes and Assessment Models I (3 credits)
This course offers an introduction to drama therapy with children, pre-adolescents and their ecosystems (such as school and families), with a particular focus on assessment. Through practical guidelines and working examples, students are introduced to certain developmental approaches to drama therapy with young people and learn to evaluate the therapeutic process involved. Assessment is presented as a process that influences all aspects of a drama therapist's practice.

CATS 645 Family Systems and the Creative Arts Therapies (3 credits)
Family systems theory is introduced and specific theories and practices of family therapy are considered. Indications for the use of family therapy and for the integration of family therapy and the creative arts therapies are explored, as are specific methods of assessment and intervention.

DTHY 645 Drama Therapy Methods, Processes and Assessment Models II (3 credits)
Prerequisite: DTHY 644.
This course is a continuation of the study of drama therapy methods, processes and assessment models initiated in DTHY 644.

CATS 689 Research Paper (9 credits)
Prerequisite: CATS 691.
The research paper represents the formal culmination of graduate studies in the Creative Arts Therapies. This paper includes a literature review, and may also include methodology, specific procedures, research population or sample, data collection, and treatment of the data as appropriate to the topic approved by the Creative Arts Therapies Faculty Research Advisory Committee. Students develop their proposals for this paper as a course requirement for CATS 691 Research in the Creative Arts Therapies, to be submitted for approval them to the Faculty Research Advisory Committee in the winter term of their first year in the program. The Committee then assigns one faculty member in the department to supervise each paper. This nine-credit component appears on the student record only once the final version of the Research Paper has been submitted to the Thesis Office and the Graduate Grade Activity Report Form, granting a grade of PASS, has been submitted to the Office of the Registrar.

CATS 691 Research in the Creative Arts Therapies (3 credits)
This course presents an overview of research, theory and practice. Creative arts processes and psychopathology are presented in the context of development models and theories, including those of the psychoanalytic, humanist/existential and cognitive/behaviourial schools. Research designs, methods and strategies, instrumentation and measurement, statistical techniques and data analysis are presented. Ethical issues involved in research are addressed.

DTHY 693 Research in Drama Therapy (3 credits)
Prerequisite: CATS 691.
A variety of research methods applicable to the scholarly analysis of drama therapy theory and practice are introduced through critical examinations of interdisciplinary arts and drama therapy research. Ethical issues specific to research in drama therapy are addressed.

CATS 698 Applied Research Project with Report (6 credits)
The student chooses this option to further explore specific pilot project reports, feasibility studies and creative research designs utilizing media intrinsic to the creative arts therapies. All applied projects must have a written component and be presented as a public seminar, upon completion.

CATS 699 Comprehensive Exam (3 credits)

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Film Studies

Faculty

Professors*:** Mario Falsetto *(Graduate Program Director)*, John Locke, Peter Rist, Catherine Russell, Thomas Waugh, Carole Zucker; ***Associate Professor*:** Martin Lefebvre; ***Assistant Professors: Erin Manning, Rosanna Maule, Haidee Wasson.

Programs

The Mel Hoppenheim School of Cinema in the Faculty of Fine Arts offers a program leading to the degree of Master of/Magisteriate in Arts in Film Studies. This is an academic degree with no studio component.

Program Objectives

The program combines an appreciation of film with a comprehensive understanding of the research methodologies appropriate to its study. Its focus is on cinema as an aesthetic practice and as a cultural institution with a special emphasis on Canadian and Québécois cinema. Students will have the option of writing a thesis in addition to courses, or of a research-focused, courses-only program of study. A wide range of topics will be covered by the program, falling under the rubrics of film theory, national cinemas, film directors and genres, film analysis and film history. In addition to the academic and scholarly aims of the program, students will be able to enroll in a limited number of practicum credits. Through internships in the local film community, the program will be closely integrated with practical activities related to film studies.

Faculty Research Interests

The faculty research range widely across the scope of film studies, reflecting many of its interdisciplinary features. Professors Rist, Waugh, Manning, and Russell have made major contributions to the study of Canadian and Québécois film, and a number of faculty members have written extensively on experimental film (Locke, Falsetto, Russell, Wasson). Other important areas are gay and lesbian filmmaking (Waugh), experimental documentary and ethnography (Russell), Contemporary European Cinema (Maule), Third World cinemas (Rist), auteur studies (Zucker, Falsetto, Maule), film acting (Zucker), film and philosophy (Locke), Japanese cinema (Russell), Indian cinema and documentary film (Waugh), Feminist theory (Maule), film theory (Zucker, Manning, Lefebvre), film exhibition and reception (Wasson), cinema and the senses (Manning), and American Cinema (Falsetto, Lefebvre, Wasson).

Master of/Magisteriate in Arts (Film Studies)

Admission Requirements. Incoming students will be expected to have a degree in film studies with a minimum B average (GPA 3.00) in their undergraduate degree. Applicants may be requested to attend an interview with the graduate committee. All applicants will be required to submit an example of their writing on cinema.

Some applicants who have undergraduate degrees in other programs will also be considered. These students must have a strong interest in cinema from the perspective of other disciplines such as art history, film production, communications, English, French, sociology, philosophy, history or political science. Students applying from non-film studies programs must demonstrate to the committee that they have a basic knowledge of core film studies materials. Qualified applicants lacking prerequisite courses may be required to take up to 12 undergraduate credits (or the equivalent, to be approved by the Department's Graduate Studies Committee) in addition to the regular graduate program.

Application Deadlines. A detailed description of the program may be obtained from the Graduate Film Studies Program Director, Mel Hoppenheim School of Cinema. Completed applications and all supporting documents, including applications for financial assistance, should be submitted by December 15 for the Fall term. For applicants not applying for financial assistance, the deadline is February 1.

Fellowships and Assistantship. The program is able to offer several fellowships ranging from $2,000 - $5,000 to incoming students.

Requirements for the Degree

1. **Credits**. A fully qualified candidate is required to complete a minimum of 45 credits.

2. **Residence**. All options have a minimum residence requirement of three terms of full-time study or the equivalent in part-time study. All work for the degree must be completed before or during the fifth year from the year of initial registration in the program. Part-time students must also complete all degree requirements within five years of original enrolment.

3. **Language**. All students are expected to have a reading knowledge of English and French at the time they begin classes. Courses will be conducted in English, although French texts may be assigned on occasion. Written and oral assignments may be submitted in either English or French. Students who cannot read both French and English texts comfortably should begin their remedial language work before starting

classes. A test will be administered by the department to ensure a functioning competency in French for those students whose first language is English or another language. All students must pass this test before receiving their degree, except those who demonstrate to the Graduate Program Director that they are fluently bilingual.

4. **Courses**. The program offers two different options to fulfill degree requirements. All students may take 9 of their required additional course credits in graduate courses offered by other departments in the university. Such courses must be approved by the Department's Graduate Studies Committee, with permission of the other department concerned. The two program options are outlined below.

Academic Regulations

1. **Academic Standing.** Students are expected to complete all courses credited toward the master's degree with a grade of B or higher. Under certain conditions one C grade may be permitted. Students should consult the written explanation of the department's rule regarding acceptable academic performance, available in the department's graduate office.

2. **C Rule.** A student who receives a C for a course will receive credit for that course, but only one C grade may count toward the degree. A student receiving a second C will be withdrawn from the program, regardless of their GPA.

3. **F Rule.** Students who receive a failing grade in the course of their studies will be withdrawn from the program. Students may apply for readmission. Students who receive another failing grade after re-admission will be withdrawn from the program.

4. **Time Limit.** All work for a master's/magisteriate degree for full-time students must be completed within 12 terms (4 years) from the time of initial registration in the program at Concordia University; for part-time students the time limit is 15 terms (5 years).

5. **Graduation Requirement.** In order to graduate, students must have a cumulative GPA of at least 3.00.

Master of/Magisteriate of Arts With Thesis (Option A)

Candidates are required to take 6 credits in Methods and 3 credits in either Canadian Cinema or Cinéma Québécois, plus 12 additional course credits. They will also take 24 credits of Research and Thesis. The maximum value of practicum (internship) credits allowable in this option is 6.

In admitting students to this option, the Graduate Program Director will ensure that a potential supervisor exists within the faculty for the student's research area. The onus is on the student, however, to secure a member of the faculty to supervise the thesis. Theses must be submitted to the department at least six weeks prior to the submission deadline given in the graduate calendar. The examination committee will consist of three faculty members, and will be chaired by the Graduate Program Director, who will remain a neutral member of the committee. The GPD may appoint an alternate chair if he or she is a supervisor or reader of the thesis.

Master of/Magisteriate of Arts without Thesis (Option B)

Candidates are required to take 6 credits in Methods and 3 credits in either Canadian or Québécois Cinema, plus 36 additional course credits. In each course they would typically be required to submit a research paper as well as to do an oral presentation. In this option, students would become familiar with a broad range of methodologies and film practices. Within this framework, they may also be able to pursue specific areas of interest by enrolling in independent studies, internships, or taking courses in other departments in the university. The maximum number of practicum (internship) credits allowable in this option is 12.

Practicum Credits

A student may receive credit for work at film institutions (e.g. festivals, archives), periodicals, educational or production establishments. Each internship must be approved in advance by the Program Director and the student must consult with an academic supervisor. The duties will be supervised by an individual within the sponsoring organization, in consultation with an academic adviser, to ensure that the student's responsibilities are in keeping with aims of the M.A. program. The academic advisor will determine the credit value of each internship, which will be evaluated on the basis of the student's written report. The report should demonstrate the student's understanding of the organization's social and cultural role as well as an analysis of the activities and functioning of the organization. In all cases, students will work without pay. The 3-credit practicum should involve at least 135 hours at the host institution. The 6-credit internship has the same requirements and provisions as the 3-credit internships, except that the student is expected to do twice the work (270 hours). This may occur in a concentrated period of time (one semester), or may be taken over two consecutive semesters.

Courses

Each year the program will offer FMST 600, either FMST 605 or FMST 610, plus a selection of courses from those listed below.

FMST 600 **Methods in Film Studies** (6 credits)
FMST 605 **Topics in English Canadian Film** (3 credits)

FMST 610 **Topics in Québécois Cinema** (3 credits)
FMST 615 **Topics in European Cinemas** (3 credits)
FMST 620 **Topics in Non-European Cinemas** (3 credits)
FMST 625 **Topics in Film History** (3 credits)
FMST 630 **Topics in Film Theory** (3 credits)
FMST 635 **Topics in Aesthetics and Cultural Theory** (3 credits)
FMST 640 **Gender Issues in Film** (3 credits)
FMST 645 **Topics in Film Genres** (3 credits)
FMST 650 **Topics in Experimental Film and Video** (3 credits)
FMST 655 **Topics in Documentary** (3 credits)
FMST 660 **Topics in Film Directors** (3 credits)
FMST 665 **Topics in Film Studies** (3 credits)
FMST 670 **Independent Study** (3 credits)
FMST 675 **Practicum** (3 credits)
FMST 680 **Practicum** (3 credits)
FMST 685 **Practicum** (6 credits)
FMST 690 **MA Research and Thesis** (24 credits)

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website: http://mfa.concordia.ca/

Studio Arts

Faculty

Department of Cinema. ***Professors:*** Stefan Anastasiu, Mario Falsetto, Chris Hinton, John Locke, Marielle Nitoslawska, Peter Rist, Catherine Russell, Thomas Waugh, Carole Zucker; ***Associate Professors:*** Richard Kerr *(Chair)*, Louise Lamarre, Martin Lefebvre, Cilia Sawadogo; ***Assistant Professors:*** Jean-Claude Bustros, Daniel Cross, Roy Cross, Guylaine Dionne, Farzin Farzaneh, Erin Manning, Rosanna Maule, Haidee Wasson.

Department of Studio Arts. ***Professors*:** Andrew Dutkewych *(Graduate Program Director)*, Trevor Gould, David Moore, François Morelli, Lee Plotek, Katherine Tweedie, Marion Wagschal, Irene Whittome; ***Associate Professors*:** Gisele Amantea, Raymonde April, Ingrid Bachmann, Shawn A. Bailey, Yves Bilodeau, Eleanor Bond, Geneviève Cadieux, Thérèse Chabot, Tim Clark, David Elliott, Evergon, Judy Garfin, Lynn Hughes, Danica Jojich, Cheryl Kolak-Dudek, Wolfgang Krol, Barbara Layne, Leila Sujir, Janet Werner; ***Assistant Professors*:** Eliza Griffiths, Erin Manning, Marisa Portolese.

Programs

The Faculty of Fine Arts offers a program leading to the degree of Master of/ Magisteriate in Fine Arts (Studio Arts) with concentration in the following:

1. **Fibres.** This program fosters a variety of conceptual and material arts practices that include innovative fibre construction, installations, collaborative work, performance, new media and interactive textiles. Studio production and discussions are tailored to the individual needs of the participant with the goal of developing a meaningful practice that contributes to an expanded field of contemporary textile arts.

2. **Film Production.** Advanced work in conceptual and aesthetic aspects of cinema, with an emphasis on independent cinema within a university environment, where the mandate is to provide a full education in the best humanistic tradition.

3. **Open Media**. Open Media is grounded historically and intellectually in an art production which is hybrid in character. It provides a venue for diverse art forms such as video, performance art, installations, and electronic art. Open Media integrates both theory and practice from a diversity of sources including the humanities, the sciences, and all of the creative arts.

4. **Painting and Drawing**. This area of concentration embraces a broad range of formal and conceptual approaches to painting and drawing. Emphasis is on artistic experimentation as part of the search to locate one's practice within an historical and contemporary critical context. MFA painting and drawing students are expected to develop a coherent individual body of work, leading to a solo graduating exhibition.

5. **Photography**. A study of the medium through personal practice with emphasis upon the development of a body of photographic work. Discussions of theoretical issues are introduced to provide a broad context for the understanding of photographic problems.

6. **Print Media**. Studio seminars focus on contemporary critical issues and theory in the context of studio practice with an emphasis on the development of personal content and forms through a committee to the printed image. Technical investigations and aesthetic experimentations are encouraged in the program through independent studio practice (leading to a body of work).

7. **Sculpture and Ceramics**. A program of intense investigation into the formation of a visual and material culture in art, challenging the parameters of Sculpture and Ceramics as material points of departure. This structure allows each participant a place for their ideas in relation to social, cultural and intellectual preconditions for visual production.

Program Objectives

The MFA Studio Arts Program provides a challenging and supportive environment in which students are engaged in intensive studio production that acknowledges the diverse cultural and theoretical framework of contemporary visual art. Students work closely with faculty in their chosen area of concentration. They also have access to all full-time Fine Arts studio and film production faculty whose expertise and research interests may be of particular benefit to them. Recognizing the importance of critical inquiry, an important aspect of the program are seminar courses that enable students to develop their understanding of conceptual, historical and theoretical subjects. The objective of the program is to prepare graduates as professional artists while providing skills and experience to fulfill the multiple roles of contemporary art practice including teaching at the post-secondary level, curating, and work in media and research.

Master of/Magisteriate in Fine Arts (Studio Arts)

Admission Requirements. A Bachelor of Fine Arts or a Bachelor of Arts with a Fine Arts or Fine Arts and Art History major, or an approved equivalent, from a recognized institution and with at least a *B* average in the major area is required. Applicants to the Film Production concentration are expected to have a Bachelor of Fine Arts or Bachelor of Arts degree in cinema or an approved equivalent with at least a *B* average in the major area. In all cases the students' undergraduate experience and proficiency must be relevant to the area in which they plan to specialize at the graduate level.

Note: Students with a BFA from Concordia University must wait two (2) years before being considered for admission into the MFA program.

Application Deadline. A detailed description of the program may be obtained from the Graduate Program Director, Studio Arts, Faculty of Fine Arts. Applicants can apply online at http://welcome.concordia.ca/. Completed applications and all supporting documents, including applications for financial assistance, must be in the hands of the graduate program director by January 20 to ensure consideration for the following academic year.

Fellowships and Assistantships. Qualified candidates are encouraged to apply for Concordia University and David J. Azrieli Graduate Fellowships, as well as awards from outside agencies. In addition, a limited number of teaching and research assistantships is available to qualified applicants undertaking full-time graduate studies.

Requirements for the Degree

1. **Credits.** A fully-qualified candidate is required to complete a minimum of 60 credits.

2. **Residence.** The minimum residence requirement is 5 terms of full-time study. It should be noted that one of these terms is a summer session. Following the residency, candidates will prepare for their Studio Project and Exhibition or Film Project (see 4 below).

3. **Courses.** Candidates for the degree are normally required to complete a minimum of 24 credits in their studio concentration and 3 credits of DISP 615 Directed Studio Practice; 3 credits in ASEM 620 Professional Practice and 18 credits from ASEM 641, 642, 643, 644, 645, 646, 651, 652, 653, 654, INTP 660, 661, 662, INDS 670, 671, 672; 9 credits in PROJ 691 Studio Project and 3 credits in PROJ 692 Exhibition or Film Project.

4. **Studio Project and Exhibition or Film Project.** In the third or fourth year and no less than six (6) months following the successful completion of the second year of course work, students may present their studio project and complete the exhibition or film project. Approval by both the student's advisor and the graduate program director is required prior to the examination. Students are also required to submit documentation of their exhibition or film project to be kept on file in the office of the graduate program director.

Academic Regulations

1. **Academic Standing.** Students are expected to complete all courses credited toward the master's/magisteriate degree with a grade of B or better.

2. **C Rule.** Under certain conditions one C grade in a course may be permitted. Students should consult the graduate program director for further elaboration.

3. **F Rule.** Students who receive a failing grade in the course of their studies will be withdrawn from the program. Students may apply for readmission. Students who receive another failing grade after re-admission will be withdrawn from the program.

4. **Time Limit.** All work for a master's/magisteriate degree for full-time students must be completed within 12 terms (4 years) from the time of initial registration in the program at Concordia University.

5. **Graduation Requirement.** In order to graduate, students must have a cumulative GPA of at least 3.00.

Courses

Each year the Faculty of Fine Arts offers a selection of courses from the Studio Arts and Cinema departments. A list of those courses, as well as information about the specific content of the seminar offerings is available from the MFA Studio Arts office.

Studio Courses

CERA 610 Ceramics I (6 credits)
A studio course providing an opportunity for intense investigation into a broad range of issues in ceramics and other disciplines. Under the supervision of a professor the structure of the course allows each participant to pursue independent interests.

CERA 611 Ceramics II (6 credits)
A continuation of CERA 610.

CERA 612 Ceramics III (6 credits)
A continuation of CERA 611.

CERA 613 Ceramics IV (6 credits)
A continuation of CERA 612.

FMPR 610 Film Production I (6 credits)
A studio course providing an opportunity to do advanced work in aesthetic and technical aspects of filmmaking with an emphasis on independent production.

FMPR 611 Film Production II (6 credits)
A continuation of FMPR 610.

FMPR 612 Film Production III (6 credits)
A continuation of FMPR 611.

FMPR 613 Film Production IV (6 credits)
A continuation of FMPR 612.

FBRS 610 Fibres I (6 credits)
A studio course providing an opportunity for intense investigation in fibres as well as other disciplines. Under the supervision of a professor, the structure of the course allows each student to pursue independent interests.

FBRS 611 Fibres II (6 credits)
A continuation of FBRS 610.

FBRS 612 Fibres III (6 credits)
A continuation of FBRS 611.

FBRS 613 Fibres IV (6 credits)
A continuation of FBRS 612.

OPME 610 Open Media I (6 credits)
A studio course encompassing an unlimited range of materials, combination of disciplines and approaches to media. Under the supervision of a faculty member, the structure of the course allows each participant to pursue independent studio practice.

OPME 611 Open Media II (6 credits)
A continuation of OPME 610.

OPME 612 Open Media III (6 credits)
A continuation of OPME 611.

OPME 613 Open Media IV (6 credits)
A continuation of OPME 612.

PTNG 610 Painting I (6 credits)
A studio course providing opportunity for intense investigation into a wide range of approaches to painting. Under the supervision of a professor the structure of the course allows each student to pursue individual interests in painting.

PTNG 611 Painting II (6 credits)
A continuation of PTNG 610.

PTNG 612 Painting III (6 credits)
A continuation of PTNG 611.

PTNG 613 Painting IV (6 credits)
A continuation of PTNG 612.

PHOT 610 Photography I (6 credits)
A studio course providing investigation into a broadly defined concept of photography. Under the supervision of a professor each student pursues independent studio practice.

PHOT 611 Photography II (6 credits)
A continuation of PHOT 610.

PHOT 612 Photography III (6 credits)
A continuation of PHOT 611.

PHOT 613 Photography IV (6 credits)
A continuation of PHOT 612.

PRIN 610 Print Media I (6 credits)
A studio course providing intense investigation of the technical and theoretical concerns of diverse forms of print media. Under the supervision of a professor, each student pursues independent studio practice.

PRIN 611 Print Media II (6 credits)
A continuation of PRIN 610.

PRIN 612 Print Media III (6 credits)
A continuation of PRIN 611.

PRIN 613 Print Media IV (6 credits)
A continuation of PRIN 612.

SCUL 610 Sculpture I (6 credits)
A studio course offering the opportunity for intense investigation into the formation of visual and material culture in art. Under the supervision of a professor each student may pursue independent studio practice.

SCUL 611 Sculpture II (6 credits)
A continuation of SCUL 610.

SCUL 612 Sculpture III (6 credits)
A continuation of SCUL 611.

SCUL 613 Sculpture IV (6 credits)
A continuation of SCUL 612.

DISP 615 Directed Studio Practice (3 credits)
Under the guidance of an instructor, students will pursue a directed studio practice.

Seminars

ASEM 620 Art: Ideas and Practices (3 credits)
A required course for all first year students, this seminar will address the relationship between theory and studio practice. Course content will reference current events such as visiting speakers and gallery exhibitions. Professional and practical issues facing the artist will also be discussed.

ASEM 641 Seminar in Contemporary Art (6 credits)
This course addresses issues which situate and inform artists and their work.

ASEM 642 Seminar in Contemporary Art (3 credits)
This course addresses issues which situate and inform artists and their work.

ASEM 643 Special Topics in Art and Ideology (6 credits)
Special topics will address a variety of issues that are factors in the making, presentation and the situating of art in society.

ASEM 644 Special Topics In Art and Ideology (3 credits)
Special topics will address a variety of issues that are factors in the making, presentation and the situating of art in society.

ASEM 645 Special Topics in Art and Culture (6 credits)
Topics are drawn from a variety of discourses to address the construction of identity in contemporary art and society.

ASEM 646 Special Topics in Art and Culture (3 credits)
Topics are drawn from a variety of discourses to address the construction of identity in contemporary art and society.

ASEM 651 Special Topics in Media Arts (6 credits)
Topics may address a wide range of critical fields related to media art practices, examining both conventional and non-traditional artworks such as performance, audio, video, and computer art, as well as other media.

ASEM 652 Special Topics in Media Arts (3 credits)
Topics may address a wide range of critical fields related to media art practices, examining both conventional and non-traditional artworks such as performance, audio, video, and computer art, as well as other media.

ASEM 653 Aspects of Contemporary Cinema (6 credits)
This seminar examines critical issues in contemporary cinema.

ASEM 654 Aspects of Contemporary Cinema (3 credits)
This seminar examines critical issues in contemporary cinema.

Internship and Independent Study

INTP 660 Professional Internship (6 credits)
Prerequisite: 21 credits completed in the MFA Program. Internship proposal must be supported by a full-time faculty member and approved with written permission by the MFA Graduate Program Director.
Under the joint supervision of a qualified professional and a full-time faculty member the student will be employed within industry, or by a professional organization or other relevant affiliation. Assessment is based upon a required paper, contributions to supervisory sessions and the successful completion of the internship (300 hours).

INTP 661 Professional Internship I (3 credits)
Prerequisite: 21 credits completed in the MFA Program. Internship proposal must be supported by a full-time faculty member and approved with written permission by the MFA Graduate Program Director.
Under the joint supervision of a qualified professional and a full-time faculty member the student will be employed within industry, or by a professional organization or other relevant affiliation. Assessment is based upon a required paper, contributions to supervisory sessions and the successful completion of the internship (150 hours).

INTP 662 Professional Internship II (3 credits)
Prerequisite: 21 credits completed in the MFA Program. Internship proposal must be supported by a full-time faculty member and approved with written permission by the MFA Graduate Program Director.
Under the joint supervision of a qualified professional and a full-time faculty member the student will be employed within industry, or by a professional organization or other relevant affiliation. Assessment is based upon a required

paper, contributions to supervisory sessions and the successful completion of the internship (150 hours).

INDS 670 Independent Study (6 credits)
Prerequisite: 21 credits completed in the MFA Program. Independent study proposal must be supported by a full-time faculty supervisor and approved with written permission by the MFA Graduate Program Director.
The student explores a specific field or topic relevant to their area of study.

INDS 671 Independent Study I (3 credits)
Prerequisite: 21 credits completed in the MFA Program. Independent study proposal must be supported by a full-time faculty supervisor and approved with written permission by the MFA Graduate Program Director.
The student explores a specific field or topic relevant to their area of study.

INDS 672 Independent Study II (3 credits)
Prerequisite: 21 credits completed in the MFA Program. Independent study proposal must be supported by a full-time faculty supervisor and approved with written permission by the MFA Graduate Program Director.
The student explores a specific field or topic relevant to their area of study.

Studio Project and Examination

PROJ 691 Studio Project (9 credits)
With the guidance of a faculty advisor, students prepare work leading to an exhibition or film project.

PROJ 692 Exhibition or Film Project (3 credits)
Following the successful completion of the Studio Project, the student prepares a professional-level presentation within a public forum (gallery, screening room, etc.) accompanied by an artist's statement. The candidate meets with an Examination Committee to describe the evolution of the work and to situate it in the context of current practice and theory. The Committee will question the student and determine whether or not to recommend that the student be awarded the MFA degree.

7141 Sherbrooke St. W., RF 315
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e-mail: dberthia@vax2.concordia.ca

Advanced Music Performance Studies

Diploma in Advanced Music Performance Studies

Faculty

Department of Music. ***Acting Chair:*** Kathleen Perry***; Associate Professors:*** Liselyn Adams, Mark Corwin, Roddy Ellias *(Graduate Program Director)*; ***Assistant Professors:*** Christine Beckett, Hélène Gagné; ***Adjunct Professors:*** Simon Aldrich, Lauretta Altman, Garry Antonio, Pierre Beaudry, Gregory Chaverdian, Valerie Kinslow, Beverly McGuire, Clemens Merkel, Richard Roberts, Anna Szpilberg, Eleonora Turovsky.

Programs

The Department of Music offers a program leading to a Diploma in Advanced Music Performance Studies.

Program Objectives

The Diploma in Advanced Music Performance Studies is intended for the candidate who is interested in developing more concentrated and selected performance skills in an individualized program of guided study. The unique practical emphasis of the program, the high performance standards and advantages of a limited enrolment should make the diploma of interest to experienced professionals and teacher-performers as well as recent graduates. In particular, it will enable the qualified student to concentrate in, relate or combine a variety of specific areas in musical performance. These include studies in repertoire and literature; performance practices; performance theory and analysis; ensemble music and performance styles.

Admission Requirements. Applicants must present evidence of highly developed skills in performance and will possess minimally a bachelor's degree in performance or an equivalent professional certificate. Under exceptional circumstances, candidates may be accepted on the basis of audition alone, or by examination and/or proof of professional study in a recognized program. Students requiring background in certain areas essential to their proposed program of study may be asked to take qualifying courses. An audition should consist of a representative program of minimum 20 minutes duration. Non-resident candidates should prepare an unedited videotape, but may be asked to audition on arrival.

Application Deadline. The deadline for application to qualifying and diploma programs is June 1 for Canadian students and February 15 for foreign students. No January entry into the program is possible.

Requirements for the Diploma

1. **Credits.** A fully-qualified candidate is required to complete a minimum of 30 credits. Each candidate's program of study will be chosen in consultation with the Graduate Program Director.

2. **Residence.** A candidate enrolled on a full-time basis will normally complete the program in two years. Exceptions may be granted by the Graduate Program Director.

3. **Recital performances.** Each candidate must successfully complete two recital performances (AMPS 520: Recital I and AMPS 530: Recital II, 6 credits each). The recital programs will be chosen in consultation with the candidate's program advisor and approved by the Graduate Studies committee. The program advisor will supervise the preparation of the recitals. Final evaluations will be made by a jury chosen by the Graduate Studies committee.

4. **Courses.** Candidates must complete 6 credits of private instrumental or vocal instruction (AMPS 521/531) with a minimum average grade of B. A minimum of 3 credits must be completed from the seminar/workshop courses (AMPS 501, 503, 505, 507, 509). In addition, the candidate is expected to participate in orchestral or ensemble performance. Exceptions may be granted by the Graduate Program Director.

Academic Regulations

1. **GPA Requirement.** Students having completed at least four courses are assessed at the end of each academic year based on creditable courses completed after their first registration in the program. To be permitted to continue, students must have obtained a cumulative grade point average of at least 2.70.

2. **C Rule.** Normally a student receiving a grade of C in two courses will be required to withdraw from the program. Students withdrawing for this reason may petition the Diploma Committee for special consideration. In cases of extenuating circumstances probationary continuation in the program will be considered.

3. **F Rule.** Students who receive a failing grade in the course of their studies will be withdrawn from the program. Students may apply for readmission.

Students who receive another failing grade after re-admission will be withdrawn from the program.

4. **Time Limit.** All work for a diploma program must be completed before or during the calendar year, two years from the year of initial registration in the program for full-time students; for part-time students the time limit is four calendar years.

5. **Graduation Requirement.** To graduate, students must have completed all course requirements with a cumulative grade point average of at least 2.70.

Courses

AMPS 501 Seminar - Workshop in Performance Skills (3 credits)
(This course may be repeated as AMPS 502)
An intensive developmental course for individual and group performance. A broad range of subjects will be explored including practice methods, effective rehearsing, repertoire research, program-building, memorization, improvisation, and approaching auditions and competitions.

AMPS 503 String Seminar (3 credits)
(This course may be repeated as AMPS 504).
This course examines specific aspects of performance and repertoire studies for stringed instruments.

AMPS 505 Piano Seminar (3 credits)
(This course may be repeated as AMPS 506)
This course examines specific aspects of performance and repertoire studies for piano.

AMPS 507 Voice Seminar (3 credits)
(This course may be repeated as AMPS 508)
This course examines specific aspects of performance and repertoire studies for voice.

AMPS 509 Organ and Harpsichord Seminar (3 credits)
(This course may be repeated as AMPS 510)
This course examines specific aspects of performance and repertoire studies for organ and harpsichord.

AMPS 511 Chamber Ensembles (3 credits)
(This course may be repeated as AMPS 512)
Ensembles work intensively on preparation and presentation of public performances or competitions.

AMPS 513 Orchestra (3 credits)
(This course may be repeated as AMPS 514)
Preparation and public performance with orchestra of one or several works as soloist or principal player.

AMPS 515 Performance Practices (3 credits)
(This course may be repeated as AMPS 516)
Individual projects in particular aspects of performance practice such as *basso continuo*, ornamentation, the cadenza, contemporary performance techniques, improvisation.

AMPS 517 Special Project in Music (3 credits)
(This course may be repeated as AMPS 518)
Individual projects in music theory, analysis, composition, aesthetics, music history, or inter-disciplinary studies connected with music.

AMPS 519 Recording Production (3 credits)
An audio recording is made in partnership with an advanced recording student. The performer works with an advanced recording student to experiment with various sound recording possibilities, placement and type of microphones, creation of resonance, ambience, "honesty" vs. enhancement, etc. involving several sessions which could include listening to recordings the performer particularly enjoys or dislikes. The advanced recording student is responsible for producing a high-quality digitally edited recording (DAT or CD-R).

AMPS 520 Recital I (6 credits)

AMPS 521 Private Instrumental or Vocal Instruction I (3 credits)
Note: This is a full year course.

AMPS 530 Recital II (6 credits)

AMPS 531 Private Instrumental or Vocal Instruction II (3 credits)
Note: This is a full year course.

AMPS 598 Special Topics in Music Performance Studies (3 credits)

AMPS 599 Special Topics in Music Performance Studies (6 credits)

EV 6.761
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website: http://design.concordia.ca/

Design & Computation Arts

Graduate Certificate: Digital Technologies in Design Art Practice

Faculty

***Associate Professors*:** Michael Longford *(Chair)*, P.K. Langshaw, Kat O'Brien, Martin Racine; ***Assistant Professors*:** Joanna Berzowska, Jennifer DeFreitas, Jason Lewis *(Graduate Program Director)*, Christopher Salter, Sha Xin Wei *(Canada Research Chair)*, Rhona Richman Kenneally.

The Graduate Certificate in Digital Technologies in Design Art Practice will provide qualified applicants with the resources to advance their conceptual and technical expertise in relation to the new digital technologies used in the design professions. The one year certificate program will be concerned with digital technologies as a medium or tool in the design art process and as a language of expression as the designer identifies and assesses the economic and social impact, and cultural consequence of expanding technologies. As the central part of the program, participants will undertake individual research projects that integrate new digital technologies into their professional practice. Students in the certificate program will work in the Centre for Digital Arts which includes Mac and PC Labs, a video production facility, computer aided design (CAD), and computer aided machining and rapid prototyping facilities adjacent to the Design Art workshops. Seminars will take place in a "smart classroom". The graduate certificate is for those who wish to expand their present level of expertise, make a career change, or improve opportunities for advancement in digital media, the design professions, and the arts and cultural industries. It can also serve as a preparation for entrance in a degree program at an advanced level.

The program is geared toward creative professionals working in the following areas:

1. Creative direction with the responsibility for the creative aspects of a project from concept through production, incorporating new solutions using digital technologies in answer to industry and client needs.
2. Design responsible for the creation, research and analysis of projects incorporating digital media as it relates to new product development, graphic communications, and multimedia projects.
3. Digital communication in web and screen based interactive projects using creative and interpretative abilities combined with technical and computer programming skills.

4. Project management with the responsibility for client liaison, coordination of a creative team, and the organization of multi-faceted design projects.
5. Independent artists in the Fine Arts who use or wish to use digital technologies in support of their creative practice.

The certificate program will incorporate links with industry, the private sector, and the community in several ways, for example, by undertaking client projects, placing interns, presentations by outside representatives, contributions of resources and services.

Admission Requirements. Applicants are required to submit a description of a research project to be undertaken in the program, a portfolio and may be invited for an interview. All applicants will need an undergraduate degree, or equivalent. Applicants who do not have a Design or Art degree, may be required to take prerequisites or additional courses.

Application Deadline. The deadline for application to the Graduate Certificate is March 1.

Requirements for the Graduate Certificate
The Graduate Certificate is a 15 credit program that combines an individualized research project with group seminars. Participants are expected to finish the program in the Fall/Winter semesters. In exceptional circumstances, students may substitute DART 510 for one of DART 501, 502 or 503.

Courses

DART 500 Individual Research Project (6 credits)
Students will have the opportunity to research the application of digital design in one or two of the following areas of concentration, under the direction of a full-time faculty advisor.

- **Design for Print Media**
  Student research projects will explore aspects of digitally-generated print media. Projects can be undertaken in experimental and applied image, in graphic design, typography, font exploration and generation, packaging book works and posters.

- **Applied and Experimental 3D Object Making**
  Student research projects will involve the design of three-dimensional objects, space and environments. This design option integrates the learning of computer software for 3D modeling, rendering and animation programs, computer aided design (CAD), computer aided machining (CAM) programs for plotting, rapid prototyping for block and concept modeling and using a 3D scanner to measure existing objects for computer input.

- **Interactive Media**
  Student research projects will investigate screen-based digital design and interactive systems. These will include websites, animation, the design of virtual spaces, interactive desktop presentations and visual navigation systems, the design and interface of virtual communities, distance learning and CD ROM based interactive educational and cultural projects, and web based national and international exchange opportunities.

- **Inter-media and Hybrid Practice**
  Student research projects will focus on digital integration or hybrid practices including social design or art interventions, installations, exhibitions, compilation works that use cross-discipline means of expression, and include the integration of digital technology into the process or final production.

- **Theoretical Investigations in Design Art**
  Student research projects will be used to investigate the theoretical constructs and discourse relating to the impact of digital technologies in art and design. This will also include the application of digital technologies for appropriate pedagogies and the development of innovative teaching methodology.

DART 501 Professional Workshop (3 credits)
This course is directed towards the practical applications of designing with digital technologies. Through a combination of hands-on workshops and invited speakers, students will study the structure of businesses, employee composition, job clientele, equipment needs and strategies for a successful design practice. Guest speakers from industry will guide classes, each on various aspects of their expertise in digital design.

DART 502 Language, Politics, Manifestos - Reading Seminar (3 credits)
The readings in this seminar will examine the ethical responsibilities, social impact, and cultural consequences of the new technologies in design art practice. The course will identify, situate and develop a language for dialogue and discourse. The issues considered will be on design ecology and ethics, gender polarization and biases, political strategies in the public sphere, and essential declarations of the digital era, in present and future technological environments.

DART 503 Theories of Interactivity (3 credits)
This course will explore the new opportunities designers have to fundamentally change the ways in which information is organized, manipulated and disseminated in the context of new communications technologies. The computer, as a medium for expression, will be explored through issues of cognition, metaphor, narrative structures, the creation of three dimensional objects and environments, symbolic interaction, information architecture and interactive visual navigational systems.

DART 510 Independent Study (3 credits)
Prerequisite: Written permission of the Graduate Program Director.
Independent study proposals must be supported by a full-tine faculty supervisor and approved with written permission by the Graduate Program Director. The student undertakes research in a specific field or topic relevant to their area of study.

JOHN MOLSON SCHOOL OF BUSINESS

Dean
T. JERRY TOMBERLIN

Associate Dean, Graduate Programs, Research and Program Evaluation
A. BAKR IBRAHIM

Associate Dean, Undergraduate and Student Affairs
GEORGE KANAAN

Executive Director, Administration and Human Resources
PATRICK L. KELLEY

Associate Dean, External Affairs and Executive Programs
MICHEL MAGNAN

Mission Statement

The primary purpose of the John Molson School of Business is to graduate employable students who are responsible community citizens. We acknowledge the centrality of our teaching mission and strive for excellence and innovation in our graduate and undergraduate programs. We place strong emphasis on research and scholarship and aim to create an intellectual climate in which varied inquiry about the theory and practice of management can flourish.

As an urban business school we welcome our bilingual and multicultural constituency. We believe that an international faculty, diverse student body, strong links to the local business community along with academic relationships forged with international partners, provide a learning environment well suited to the demands of a globalizing and open economy.

We are recognized for a long tradition of offering accessible, flexible and relevant commerce and administration programs to the Montreal community. The fundamental purpose of all our intellectual, scholarly and teaching endeavours is to equip our students with a range of essential competencies and values which help them achieve personal goals and make useful contributions to the communities in which they reside.

Faculty

Department of Accountancy. ***Professors:*** M. Rai Kapoor, Michel Magnan (*Associate Dean, External Affairs and Executive Program)*; ***Associate Professors:*** Ibrahim M. Aly, Henry Dauderis, Charles K. Draimin (*Acting Chair)*, Kelly F. Gheyara, George Kanaan *(Associate Dean, Academic & Student Affairs - Undergraduate Programs; Academic Director, International Business Programs)*, Dominic Peltier-Rivest, Juan J. Segovia; ***Assistant Professors:*** Emilio Boulianne, Sandra Ho, Majidul Islam, Joung Kim, Rafael Lara, George Lowenfeld, Garen Markarian, Sameer Mustafa.

Department of Decision Sciences and Management Information Systems. ***Professors:*** Clarence S. Bayne *(Director, Graduate Diploma in Administration Program; Graduate Diploma in Sports Administration Program; Graduate Certificate in Administration Program; Director, Entrepreneurship Institute for the Development of Minority Communities),* Dale Doreen, Suresh K. Goyal, Gregory E. Kersten, Tak K. Mak, Fassil Nebebe, Ahmet Satir, Jerry Tomberlin *(Dean)*; ***Associate Professors:*** El Sayed Abou-Zeid, Bouchaib Bahli, Meral Buyukkurt, Anne-Marie Croteau, Jamshid Etezadi, Dennis Kira *(Chair)*, Danielle Morin, Mahesh Sharma, Rustam Vahidov; ***Assistant Professors:*** Anne Beaudry, Yasemin Kahvaoglu, Dowan Kwon, Kevin Laframboise, Chitu Okoli, Raafat Saade.

Department of Finance. ***Professors:*** Lawrence Kryzanowski, Stylianos Perrakis, Lorne N. Switzer; ***Associate Professors:*** Arshad Ahmad, Sandra Betton *(Chair)*, Harjeet S. Bhabra *(Director, MBA)*, Abraham I. Brodt, Alan Hochstein, Arvind K. Jain, Gregory J. Lypny, Latha Shanker, Khaled Soufani, Dogan Tirtiroglu; ***Assistant Professors:*** Seoungpil Ahn, Nilanjan Basu, Maria Boutchkova, Serguei Issaenko, Imants Paeglis, Ian Rakita, Thomas Walker.

Department of Management. ***Professors:*** Steven H. Appelbaum, Kamal Argheyd *(Chair),* Michael G. Carney, A. Bakr Ibrahim *(Associate Dean, Graduate Programs and Research and Program Evaluation / Director, CSBCB),* Muhammad Jamal, Gary W. Johns, Jean McGuire, Rick Molz, Robert J. Oppenheimer, William D. Taylor; ***Associate Professors:*** Stephane Brutus, Isabelle Dostaler *(Acting Director, AMBA)*, Linda Dyer, Ronald Ferguson, Kai Lamertz, Terri R. Lituchy; ***Assistant Professors:*** Kathleen Boies, Mehdi Farashahi, Marylene Gagne, Tracy Hecht, Claude Marcotte, Martin Martens.

Department of Marketing. ***Professors:*** Bryan Barbieri *(Acting Director, EMBA),* Ulrike de Brentani, Annamma Joy, Michel Laroche, Christopher A. Ross; ***Associate Professors:*** Michel Bergier *(Acting Chair)*, H. Onur Bodur, Bedri K. Buyukkurt, B. Zeki Gidengil, Lea Katsanis, Jordan Le Bel, Michèle Paulin, Gad Saad, Mrugank Thakor; ***Assistant Professors:*** Bianca Grohmann, Jooseop Lim.

Programs

The John Molson School of Business offers the opportunity for research and study leading to the degrees of Doctor of/Doctorate in Philosophy (Business Administration), Master of/Magisteriate of Science (Administration), Master in Investment Management, Master of/Magisteriate in Business Administration (with an International Aviation Option, an Executive Option and an Investment Management Option). In addition, Graduate Diploma Programs are offered in Aviation Management, Chartered Accountancy, Administration, Investment Management and Sport Administration along with Graduate Certificates in Aviation Management, e-Business, Community Organizational Development, Event Management and Fundraising, Management Accountancy and Management of Health Care Organizations. Additional information about these programs may be obtained by contacting the respective Graduate Program Director.

Academic Regulations

The academic regulations found in this calendar are applicable to all students. In addition, all graduate students in the John Molson School of Business must observe the academic regulations listed below for their program.

Qualifying Course

COMM 610 Basic Quantitative Skills for Administration (3 credits)
The objectives of this course are to review the algebra, calculus, probability, and statistics that students may require in courses with quantitative content. Applications to management and economics will be discussed.
Note: Students who have taken COMM 500 or COMM 600 may not receive credit for this course.

John Molson School of Business

1550 de Maisonneuve, GM 710
Tel.: 848-2424 ext. 4149; Fax: 848-4593

Doctor of/Doctorate in Philosophy (Business Administration)

Director: Dr. Gary Johns; *Assistant Director*: Heather Thomson

The John Molson School of Business offers a Ph.D. in Business Administration in collaboration with McGill University, l'École des Hautes Études Commerciales de Montréal, and l'Université du Québec à Montréal. The joint nature of the program gives the student access to a large number of highly qualified scholars with a wide range of expertise. The principal objective of the program is to educate competent researchers and to stimulate research on management problems.

Admission Requirements. To be considered for admission, applicants must have a master's degree or equivalent with high academic standing. Enrolment in the program is strictly limited and applicants are selected on the basis of past academic record, letters of recommendation and the relevance of their proposed research to the areas of specialization of the department concerned. Applicants must submit proof of satisfactory performance (600+) on the Graduate Management Admissions Test (GMAT) within the previous five years.

Test of English as a Foreign Language (TOEFL). Applicants whose first language is not English or French and who are not Canadian citizens or landed immigrants must obtain a satisfactory score (Computer Test: 250; Paper Test: 600 minimum) in the Test of English as a Foreign Language (TOEFL) before being considered for admission. This requirement will be waived for foreign students completing their undergraduate degrees at a university where English or French is the language of instruction.

Application Deadlines. The deadline for admission of Canadian citizens, landed immigrants and International students is February 1 for the Fall term. The deadline for admission to the Winter term for Canadian citizens and Landed Immigrants is September 15. International students are not admitted for the Winter term.

Language Requirement. The language of instruction at Concordia University is English. However, students who also have capacity in French will be able to best profit from the joint nature of the program. In particular, the ability to read technical material and to follow lectures and discussions in both languages is an asset. Students may write reports, examinations and the thesis in English or in French as they choose.

Ph.D. in Business Administration

Requirements for the Degree

1. **Credits**. A fully-qualified candidate entering the program with a Master of Business Administration or a Master of Science in Administration degree is required to complete a minimum of 90 credits. Candidates admitted with a Master's degree in other disciplines will, in general, be required to complete more than the minimum number of credits. The program consists of three consecutive phases: qualification, specialization, and thesis.

   a. **Phase I—Qualifying.** (The minimum number of credits to be determined upon acceptance to the program). Students without a formal academic background in business administration will be required to take up to five (5) 3-credit courses, usually at the MBA, or M.Sc. level, from among the following disciplines: business economics, organizational behaviour, decision sciences and management information systems, marketing, finance, business policy and strategy, accountancy and control. Up to two (2) of these courses may be in the student's intended area of Ph.D. specialization. Students may also be required to take Applied Linear Statistical Models and Multivariate Data Analysis depending on previous studies.

   b. **Phase II—Specialization.** (Minimum 30 credits). In this phase, the program of study is determined by the student's Phase II supervisory committee. The **minimum** requirement of this phase is 30 credits. All students take one 3-credit compulsory course in pedagogy or approved equivalent. All other seminars in the Phase II program will depend on each student's field of interest, but will generally be organized around one major field and one minor discipline. The major field can be: organizational behaviour, decision sciences, management information systems, marketing, finance, business policy/strategy, and accountancy; a related interdisciplinary field (such as international business); or a significant subfield (such as consumer behaviour). The minor discipline may include a foundation discipline such as mathematics, social psychology, political science, philosophy or economics, or a sub-discipline (subject to approval) that supports the student's major field. Instruction for these minor courses is frequently given outside of the Ph.D. program. Students must take a minimum of four seminars (12 credits) in the major field including one approved research methodology seminar, and at least two seminars (6 credits) in the minor discipline, followed by a set of comprehensive examinations (9 credits).

   c. **Phase III—Thesis.** As each student enters Phase III of the program, the School's Ph.D. committee approves a Phase III committee. The Phase III committee supervises all stages of the thesis (60 credits) from the initial proposal through to the final defence. For details of doctoral thesis examinations, see the appropriate section of this calendar.

Academic Regulations

1. **GPA Requirement.** The academic progress of students is monitored on a periodic basis. To be permitted to continue in the program, students must obtain a cumulative grade point average (GPA) of 3.00 based on a minimum of 12 credits. Students whose GPA falls below 3.00 are considered to be on academic probation during the following review period. Students whose GPA falls below 3.00 for two consecutive review periods are withdrawn from the program.

2. **C Rule.** Students who receive more than one *C* during the course of their Ph.D. studies will be withdrawn from the program. The student may appeal for reinstatement to the program director. Students who receive another *C* after reinstatement will be withdrawn from the program and will not be considered for reinstatement.

3. **F Rule.** Students who fail a course are withdrawn from their program and may appeal for reinstatement. Students who fail a course after reinstatement will be withdrawn from the program and will not be considered for reinstatement.

4. **Time Limit.** Students will have a maximum of three years (nine semesters) in which to complete Phase I and Phase II requirements from date of original registration in the program. Students with significant pre-requisite requirements may be granted a one semester extension. The Written and Oral Comprehensive Examinations must be completed within one semester (four months) following completion of course work.

   All work for the Ph.D. in Business Administration must be completed before or during the calendar year, six years from the time of original registration in the program. Under exceptional circumstances the time limit may be extended upon the recommendation of the Ph.D. Program Director and the agreement of the Dean of Graduate Studies.

5. **Graduation Requirement.** In order to graduate, students must have a cumulative GPA of 3.00.

Courses

Phase I (Qualifying)

MSCA 602 Applied Linear Statistical Models (3 credits) *
MSCA 683 Seminar in Multivariate Data Analysis (3 credits) *

* May not be required depending on previous studies.

Phase II (Required Courses)

ADMI870 Research Methodology in Management or approved equivalent (3 credits)
ADMI 880 Pedagogical Methods or approved equivalent (3 credits)
ADMI 889 Comprehensive Examinations (9 credits)

Phase II (Elective Courses)

Courses offered in the following disciplines may vary in content from term to term and from year to year. Students wishing to take more than one seminar in Marketing (for example) will register in the first instance for Administration A830 and subsequently for B830, C830 etc. All seminars are 3 credits.

ADMI 800-809 Business Economics
ADMI 810-819 Organizational Behaviour
ADMI 820-829 Decision Sciences and Management Information Systems
ADMI 830-839 Marketing
ADMI 840-849 Finance
ADMI 850-859 Business Policy and Strategy
ADMI 860-869 Accountancy and Control

Phase III (Thesis)

ADMI 890 Thesis (60 credits)

John Molson School of Business

1550 de Maisonneuve Blvd. W., GM 710
Tel.: 848-2424 ext. 4149; Fax: 848-4593

Master of/Magisteriate in Science (Administration)

Director: Dr. Gary Johns; *Assistant Director:* Heather Thomson

Program Objectives

The Master of Science (Administration) Program is intended for students who wish to prepare for specialized careers in the performance of technical and analytical functions in the administration of organizations. The M.Sc. Program allows students to concentrate in a specialized area of administration, emphasizing the research and scientific aspects of the area. The academic aim of this program rests in the systematic acquisition of knowledge in the areas of Decision Sciences and Management Information Systems; Finance; Management; or Marketing; and in the development of the skills particularly suited to thoroughly explore the research issues in these areas. These skills are oriented toward developing a critical viewpoint which will be helpful in undertaking further research.

The four different options of the Master of Science (Administration) are as follows:
- Finance
- Management
- Marketing
- Decision Sciences and Management Information Systems

Admission Requirements. The program is open to both full-time and part-time students.

A bachelor's degree with high academic standing would serve as a prerequisite for the program. To be eligible for admission, applicants must have maintained at least a *B* average in their final two years or have obtained a Grade Point Average (GPA) of at least 3.00 on a 4.00 scale, or the equivalent, from an accredited university.

Applicants with a bachelor's degree in other than Commerce or Business Administration may be required to take prerequisite courses in addition to the regular graduate program. The specific courses to be taken will be determined by the Department M.Sc. Committee with the approval of the School's M.Sc. Director depending upon the student's background and area of specialization.

Applicants must submit proof of satisfactory performance on the Graduate Management Admission Test (GMAT) or the Graduate Record Examination

(GRE) within the previous five years, three letters of recommendation and a statement of purpose. (Please note that the GMAT is preferred).

Proficiency in English or French. Applicants whose first language is not English or French and who are not Canadian citizens or landed immigrants must obtain a satisfactory score (Computer Test: 250; Paper Test: 600 minimum) in the Test of English as a Foreign Language (TOEFL) before being considered for admission. This requirement will be waived for foreign students completing their undergraduate degrees at a university where English or French is the language of instruction.

Application Deadlines. *Canadian Citizens and Landed Immigrants*: The deadlines for application are March 30 (Early Admission) and June 1 for the Fall term; November 1 for the Winter term. *International Students*: To allow for Visa procedures and to be assured consideration by Concordia University, International Students must apply by February 1 for the Fall term or June 1 for the Winter term.

Requirements for the Degree

1. **Credits.** The allocation of credits in the M.Sc. Program is as follows:

Core Courses (3)	**9 credits**
Research Methodology	**3 credits**
Specialized Seminars (5)	**15 credits**
Research Thesis	**18 credits**
Total:	**45 credits**

2. **Residence.** In accordance with standard university policy, the minimum residence requirement for this master's degree is three terms of full-time study, or the equivalent in part-time study. This requirement must be met regardless of the amount of graduate work previously completed in any other program or at any other university.

Academic Regulations

Credit Load: Full-time Students. The normal course load for full-time students is 12 credits in each of the terms in the first year and the 18 credit thesis in the second year.

Credit Load: Part-time Students. The maximum course load for part-time students is 12 credits per calendar year. The 18 credit thesis should take one year to eighteen months to complete.

Course Reduction. In exceptional circumstances, students may be granted permission to reduce their course load below the normal specified in paragraphs one and two above while remaining in good standing.

Program and Course Withdrawal. Students who wish to apply for withdrawal from the M.Sc. program must do so in writing at the office of the Director, M.Sc. Program. Students may drop a course up to the end of the course change period. This is normally about two weeks after classes begin (see *Academic Calendar*). In addition to the regulations which appear in the Graduate Registration Section of the Graduate Calendar, students enrolled in the M.Sc. program will be required to observe the following.

Academic Standing. The scholastic performance of all M.Sc. students will be reviewed on a regular basis by the Departmental M.Sc. Committee. This assessment will be based on the final grades obtained in all courses for which students have registered subsequent to their admission into the M.Sc. Program. To be considered in good standing at such a review, a student must maintain a cumulative grade point average (GPA) of 3.00 or better.

Conditional Standing. A student who has not fulfilled the above condition will be either a student on conditional standing or a failed student. A student on conditional standing who has not completed his or her course component will be required to achieve a cumulative GPA of 3.00 or better by the time of the next assessment. A student who has completed his or her course component and has not achieved a cumulative GPA of 3.00 will be required to repeat courses or take up to 6 additional credits (2 courses) to meet the 3.0 GPA graduation requirement. The course(s) will be determined by the Departmental M.Sc. Committee. A student who does not satisfy the requirements of conditional standing will be considered a failed student and will be dismissed from the program.

Failure Regulation. Students who fail one course in the program will be dismissed from the program and may appeal for reinstatement. Students who fail a core course and are re-admitted must repeat the core course. Students who fail a specialized seminar and are re-admitted may either repeat the seminar or replace it by taking another specialized seminar. Students who fail a course after reinstatement will be dismissed from the program and will not be considered for reinstatement. Students who fail more than one course will be dismissed from the program and will not be considered for re-admission.

C Rule. Students who receive more than one C during the course of their M.Sc. in Administration studies will be dismissed from the program. The student may appeal for reinstatement to the program director. Students who receive another C after reinstatement will be dismissed from the program and will not be considered for reinstatement.

Time Limit. All work for the M.Sc. program degree for full-time students must be completed within 12 terms (4 years) from the time of initial registration in the program at Concordia University; for part-time students the time limit is 15 terms (5 years).

Graduation Requirement. In order to graduate, students must have a cumulative GPA of 3.00.

Core Courses

MSCA 601 Financial Economics
MSCA 602 Applied Linear Statistical Models
MSCA 603 Administrative Theory
MSCA 604 Managerial Economics

Research Methodology Courses. Students are required to take the 3-credit Research methodology course of the option they have chosen. The Research Methodology courses are as follows:

MSCA 611 Research Methodology - Finance
MSCA 612 Research Methodology - Management
MSCA 613 Research Methodology - Marketing
MSCS 614 Research Methodology - Decision Sciences and M.I.S.

Specialized Seminars

In addition, candidates in the M.Sc. (Administration) program will take 15 credits of coursework in an area of specialization.

Subject to approval by the departmental M.Sc. Committee Chair, students may be permitted to substitute related cognate courses from other departments in the John Molson School of Business or from departments in other faculties in the university. M.Sc. students may also take one or more of their specialized seminars from the Phase II seminars in the Ph.D. program if they meet the prerequisites for these courses. This option is especially attractive to those students who are considering going into the Ph.D. program upon finishing their M.Sc. The approval of the Ph.D. Director is required (see section on *Cognate Courses)*.

Upon consultation with, and approval of, the appropriate Department M.Sc. Representative, each candidate will take five (5) 3-credit specialized seminars or other cognate courses approved by the Departmental M.Sc. Committee Option Representative. Each year a selection of specialized seminars will be offered from those listed below:

Finance (15 credits)

MSCA 621 Seminar in Investment Theory
MSCA 622 Seminar in Investment Management
MSCA 623 Seminar in Financial Theory and Corporate Policy
MSCA 624 Seminar in Mergers, Restructuring, and Corporate Control
MSCA 625 Seminar in Options and Futures

MSCA 626 Seminar in Financial Intermediation and Canadian Financial Institutions
MSCA 628 Seminar in International Banking
MSCA 629 Seminar in International Financial Management
MSCA 631 Seminar in Financial Management of Corporate Pension Plans
MSCA 632 Seminar in Advanced Topics in Finance

Management (15 credits)

MSCA 641 Seminar in Human Resource Management I: Organizational Staffing
MSCA 642 Seminar in Human Resource Management II: Employee Development
MSCA 643 Seminar in Human Resource Management III: Motivation, Evaluation, Compensation and Rewards
MSCA 644 Seminar in Organizational Behaviour
MSCA 645 Seminar in Organizational Theory and Design
MSCA 646 Seminar in Organizational Development and Change
MSCA 647 Seminar in Strategic Management
MSCA 652 Seminar in Special Topics
MSCA 653 Seminar in Total Quality Management (TQM)

Marketing (15 credits)

MSCA 661 Seminar in Advanced Marketing Data Analysis
MSCA 662 Seminar in Consumer Research
MSCA 665 Seminar in Marketing Communications
MSCA 666 Seminar in International Marketing
MSCA 667 Seminar in Macromarketing
MSCA 668 Seminar in Product Management
MSCA 669 Seminar in Industrial Marketing
MSCA 670 Seminar in Services Marketing
MSCA 672 Seminar in Advanced Topics in Marketing

Decision Sciences and Management Information Systems (15 credits)

MSCA 682 Seminar in Sampling Theory
MSCA 683 Seminar in Multivariate Data Analysis
MSCA 685 Enterprise Systems and Process Integration
MSCA 686 Competitive Advantage Through Information Technology
MSCA 690 Data Management
MSCA 692 Intelligent Applications for Business
MSCA 693 Seminar in Special Topics in Decision Sciences and Management Information Systems
MSCA 694 Knowledge Management
MSCA 695 Outsourcing of Information Service

MSCA 696 Adoption, Use and Appropriation of Information Technologies
MSCA 697 Advanced Topics in Information Systems Development
MSCA 698 E-Business

Cognate Courses

The John Molson School of Business foresees the possibility of permitting certain students to select courses outside the M.Sc. Program as part of their specialized seminar requirements. In each case, the decision granting such permission will be based on the appropriateness of the cognate course according to the student's research orientation. With the approval of both the Departmental M.Sc. Committee within the School and the external department in question, students may be permitted to select cognate courses from other Departments according to the student's specific pedagogical needs. Students may be permitted to take a maximum of two cognate courses (6 credits).

MSCA 699 Research Thesis (18 credits)
The M.Sc. thesis requirement is intended to provide candidates with an opportunity to carry out an investigation in depth in a particular area of interest and to make a substantive contribution to knowledge in the area. It is expected that the thesis will include a comprehensive and critical synthesis of the relevant literature and will also embody either a substantive theoretical contribution to knowledge, a rigorous empirical investigation or both.

A Thesis Committee consists of a faculty member as Supervisor and two other faculty members. An Examining Committee consists of the Thesis Committee and a Thesis Examination Chair appointed by the School's M.Sc. Director in accordance with the thesis regulations specified in the relevant section of this calendar.

Course Descriptions (Core Courses)

MSCA 601 Financial Economics
The objective of this course is to introduce the theory of financial decision making. The fundamental issue to be addressed in finance is the allocation of scarce resources between current consumption and future consumption (investment). The interesting questions will arise when we consider the valuation of risky investment opportunities. The major objective of the course will be to learn how to conduct and present research.

MSCA 602 Applied Linear Statistical Models
Various Linear Model topics in statistical analysis applied to business and economic problems will be reviewed. This will include design of experiments, analysis of variance, multiple regression, model building, multi-collinearity influential observations, variable selection techniques, ANOVA models with random effects, analysis of covariance etc. Case studies illustrating the different areas of application will be used.

MSCA 603 Administrative Theory
This course will review the important developments in administrative and behavioural thinking and focus on the work of management scholars who have made significant contributions to the practice of management. The course will span the various levels of organization analysis (individual, group, organization and environment) and a variety of perspectives on organizational behaviour, organizational theory and administrative thought. Students are expected to understand and be able to critically assess the impact of concepts, theories, and scholarly contributions of material covered.

MSCA 604 Managerial Economics
This course will begin with a rigorous review of microeconomic theory including analysis of consumer behaviour and demand, the theory of production and supply, optimal price and output determination by firms, and the concept of market equilibrium. Within this framework, the course will examine specific finance theory issues clarified by microeconomic theory.

Course Descriptions (Research Methodology Courses)

MSCA 611 Research Methodology - Finance
This seminar is intended to prepare students to conduct econometric analysis in financial research. The material builds on the topics covered in the core course MSCA 602 (Applied Linear Statistical Models) and continues to provide an in-depth understanding of the advanced econometric techniques in finance. Topics covered include: maximum likelihood estimation, autoregressive estimation techniques, generalized least square procedures, simultaneous equation systems, non-linear estimation techniques, limited dependant variables, and qualitative response model. In addition, the course provides an introduction to the use and the development of stochastic modelling in finance.

MSCA 612 Research Methodology - Management
This course will provide students with the basic tools needed to conduct systematic research in organizations. The emphasis will be on how scientific research principles can be used to identify and understand organizational problems and guide corrective action. The course will provide a general understanding of psychometric theory and measurement including internal validity, external validity, reliability, and questionnaire and interview design. Applied research methodologies including experiments, quasi-experiments, surveys, and program evaluation will be covered. Various qualitative research methods (e.g., case analysis) will also be addressed.

MSCA 613 Research Methodology - Marketing
The objective of this course is to provide a basic understanding of the research process and a knowledge of the methods which will be required in the design and execution of scientific research projects to answer business problems. The course will help the students to develop the skills needed to assess the

feasibility and potential contribution of proposed studies, and critically evaluate the results of research projects reported by others. The focus of the course is research methodology rather than specific substantive issues in marketing. However, the applications of the relevant research methods will be reviewed through discussions of exemplary articles published in the leading marketing journals. The specific research methods covered and the relative emphasis each method gets will vary from one year to another to reflect the current research trends in marketing. Some of the cornerstone topics of this course will be theory construction, measurement, reliability and validity issues, overview of different data collection methods from respondents, and internal and external validity issues in experimental design in social sciences.

MSCA 614 Research Methodology - Decision Sciences and M.I.S.
Due to the multidisciplinary nature of the field of information systems (IS), a variety of diverse methods are used in MIS research. This course provides an in-depth understanding of both quantitative and qualitative research in IS and provides a comprehensive coverage of the research methods used in studying IS problems. Among the topics covered are: research process, scientific inquiry, theory and research, ethics, research plan, design research in IS, quantitative and qualitative research design, validity and reliability, interviewing, questionnaire design, positivist and interpretivist approaches, Internet-mediated research and statistical analysis.

John Molson School of Business

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Master of/Magisteriate in Business Administration

Director: Dr. Harjeet S. Bhabra; *Assistant Director, Marketing and Student Affairs*: Lissa Matyas; *Assistant Director, Admissions and Administration*: Chen Feng Huang

Program Objectives

The John Molson MBA program is offered in two formats: (1) a regular MBA and (2) an accelerated MBA for students with an undergraduate business degree.

The program emphasizes an interdisciplinary general management perspective. This orientation provides students with the expertise they need to become effective business professionals. The program's overall goal focuses on the achievement of managerial success in an increasingly complex and competitive business environment. The strategies used to achieve this objective will enable students to:

1. integrate the knowledge and skills they have acquired to achieve corporate goals;
2. make decisions that reflect sensitivity to the relationships between the firm and the social, ethical, economic and political environments within which it operates;
3. apply analytical, interpersonal and communication skills necessary for effective management; and
4. refine their career goals and develop the confidence they need to confront an ever-changing business environment.

Admission Requirements. The MBA Admissions Committee evaluates the potential of each candidate for success within the program. Applicants for the regular MBA must hold a bachelor's degree in high standing, or qualifications accepted as equivalent by the School of Graduate Studies, and a minimum of two years full-time work experience. Applicants considered for the accelerated MBA must be approved by the MBA Admissions Committee. They must hold an undergraduate business degree within **six** years with a cumulative grade point average (CGPA) of 3.30, and a minimum of two years of full-time work experience.

Applicants to the above programs are evaluated according to the following five criteria: undergraduate grades; Graduate Management Admission Test (GMAT) score; work experience; detailed evaluations from employers and former university instructors; and a letter of intent.

1. Following acceptance to the MBA program, by the MBA Admissions Committee, students without an undergraduate business degree who began the DIA/DSA program after the Summer 1998 term and have completed the DIA/DSA program requirements, will be able to complete the MBA program, as outlined under item #4 of Requirements for the degree. Those with an undergraduate business Degree, thus eligible for the accelerated MBA, must complete the required courses in consultation with the MBA Program Director, based on the student's academic background.

2. Following acceptance to the MBA program, by the MBA Admissions Committee, students without an undergraduate business degree who have completed the Diploma in Chartered Accountancy program may complete the MBA program, as outlined under item #5 of Requirements for the Degree. Those with an undergraduate business degree, thus eligible for the accelerated MBA, must complete the required courses in consultation with the MBA Program Director, based on the student's academic background.

Application Deadlines.
Canadian Citizens and Landed Immigrants: The deadlines for complete applications are: February 28 for the Summer and Fall terms; October 1 for the Winter term.
International Students: To allow for visa procedures and to be assured consideration by Concordia University, it is recommended that international students apply by February 15 for the Fall term, June 15 for the Winter term and October 15 for the Summer term. Applications will continue to be accepted until all places in the program have been filled.

Competence in Mathematical Skills. Upon being accepted into the MBA program, students who lack requisite mathematical skills must successfully complete COMM 610 (Basic Quantitative Skills). This course can be taken prior to or concurrently with MBA courses. Normally, this course is offered during the Fall term. Therefore, students are required to complete this course by the end of their first Fall term. In addition, some students may be advised to take an undergraduate course in mathematics prior to beginning their MBA studies.

Proficiency in English or French. Applicants whose first language is not English or French, and who are not Canadian citizens or landed immigrants, must achieve a satisfactory performance in the Test of English as a Foreign Language (TOEFL) before being considered for admission. This requirement will be waived for foreign students who have completed their undergraduate degrees at a university where English or French is the language of instruction.

Requirements for the Degree

1. **Credits.** To earn an MBA degree from Concordia University, a student in the regular MBA program must normally complete 57 credits and a student in the

accelerated MBA program 45 credits, in addition to any required qualifying courses. This requirement will be reduced only in cases where transfer credits are granted.

2. **Residence Requirement.** The residence requirement for the regular MBA is normally four terms of full-time study, or the equivalent in part-time study. This requirement may be reduced to three terms of full-time study or the equivalent in part-time study for students admitted with transfer credits.

   The residence requirement for the accelerated MBA is normally three terms of full-time study, or the equivalent in part-time study.

3. **Course Substitution.** Students may be exempted from certain courses on the basis of course work completed prior to entry into the program. However, such courses must be replaced by other MBA courses, or, subject to approval, by M.Sc. (Administration) courses or graduate courses taken outside the John Molson School of Business. While students admitted with course substitutions are not required to take all of the courses specified in the program, every student must meet the degree requirement of 57 credits. Details of policies and practices related to course substitution may be obtained from the Student Affairs Coordinator, MBA Program.

4. **MBA Option for DIA/DSA Students.**
   The required MBA courses for students who have completed the DIA/DSA course work consist of the following seven core courses:

   MBA 607 Financial Accounting for Managerial Decisions
   MBA 614 Financial Management
   MBA 616 Operations Management
   MBA 618 National and International Economics
   MBA 622 Business Policy and Strategy
   MBA 625 Strategy and Social Responsibility in Action
   MBA 628 Management Accounting
   + 4 electives

   Advanced Standing for the MBA Program. Students in good academic standing in the DIA or DSA Programs and who have completed all the requirements for the DIA or DSA Programs, including the internship or the research project, may be granted advanced standing of 24 transfer credits, upon admission to the MBA Program. In addition, students who have completed all the requirements must withdraw from the DIA or DSA before they can obtain transfer credits. Students who do not meet these requirements will not be granted transfer credits for courses taken in the DIA or DSA Programs.

Note: Applicants who have had their Diploma conferred will not receive transfer credit. Course exemptions may be granted, but they must be replaced by alternate courses.

5. **MBA Option for Diploma in Chartered Accountancy Students.**
Nine credits will be awarded for ACCO 631 and ACCO 685 to those students accepted for advanced standing, plus 21 credits for other accounting courses, for a total of 30 credits of advanced standing.

Students having completed the course work in the Diploma in Chartered Accountancy Program will be required to take the following core courses:
MBA 606 Managerial Economics
MBA 609 Organizational Behaviour
MBA 610 Marketing Management
MBA 618 National and International Economics
MBA 622 Business Policy and Strategy
MBA 625 Strategy and Social Responsibility in Action
+ 3 electives

Note: Applicants who have had their Diploma conferred will not receive transfer credit. Alternate courses may be substituted.

Academic Regulations

1. **Course Load for Full-time Students.** The course load for a full-time student is a minimum of 12 credits of course work per term. Students can accelerate their progress by taking courses in the Summer term.

2. **Course Load for Part-time Students.** The normal course load for a part-time student is a minimum of 12 credits per calendar year. A part-time student may not, without permission, register for more than 6 credits in each of the Fall and Winter terms, but may accelerate their progress in the program by taking courses in the Summer term.

3. **Change of Status.** Students may be granted permission to change their status from part-time to full-time or vice-versa. If a change is permitted, the student's program time limit will be adjusted accordingly.

4. **Course Load Reduction.** In exceptional circumstances, students may be granted permission to reduce their course load below the normal specified in paragraphs 1 and 2 above, while remaining in good standing. Full-time students completing less than 9 credits per term will be reclassified as part-time, and must comply with the course load requirements for part-time students, specified in paragraph 2 above.

Part-time students with a reduced course load must complete a minimum of 9 credits per year, including the Summer term. Full- and part-time students who have been granted such permission will be subject to specific conditions, as outlined in the section on **Academic Standing.**

5. **Program and Course Withdrawal.** Students who wish to apply for withdrawal from the MBA program must do so in writing at the MBA Program office. Students may drop a course up to the end of the course change period. (This is normally about two weeks after classes begin - see Academic Calendar.) Application to drop a course must be made in writing at the MBA Program office. Students should bear in mind the minimum and maximum course load regulations specified above, when dropping or adding courses.

6. **Academic Standing.** The scholastic performance of all MBA students is reviewed at the end of each term for full-time students. Part-time students are reviewed annually. This assessment is based on the final grades of the courses completed during the term. The purpose of the review is to monitor the students' status and progress, to maintain the standards expected by the John Molson School of Business, and to assist students in achieving success in the Program.

   To be considered in good standing at such a review, a student must have:
   a. Successfully completed the required course load specified in paragraphs 1 and 2 above; and
   b. Achieved a grade point average (GPA) of 3.00 or better, since the previous review or since admission, in the case of the final review; or
   c. Achieved a grade of B or better in each course taken during any term in which a course load reduction has been granted, as specified in paragraph 4 above.

7. **Conditional and Failed Standing.** Students who have not met the conditions for good standing specified in Paragraph 6 will be considered as either *students on conditional standing* or *failed students*.

   Conditional standing is used to monitor the progress of students experiencing difficulty and to assist them in completing the Program successfully. Students on conditional standing will be required to achieve a minimum GPA of 3.00 during their period of conditional standing. Students on conditional standing are not normally permitted to drop any course. Additional requirements may be imposed in individual cases. Students who do not meet the requirements of their conditional standing are considered as *failed students* and are withdrawn from the Program.

8. **Failure Regulation.** Students who fail one or more courses in the Program, or do not meet the conditions of their conditional standing are withdrawn from the Program.

9. **Business Communication Skills.** All students in the MBA Program must demonstrate a high level of competence in written and oral communications. A strong managerial communications component has been designed into a number of MBA courses to help students evaluate and develop their skills in this area. Students who exhibit deficiencies in communication skills will be expected to obtain appropriate assistance through designated courses, workshops or individual tutorial support.

10. **Cognate Courses.** Subject to the approval of the MBA Program Director and the departments concerned, MBA students are permitted to choose courses from those offered by other programs within the John Molson School of Business or from courses offered by other Faculties. A maximum of 12 credits can be selected from courses outside the John Molson School of Business.

11. **Graduation Requirement.** In order to graduate, students must have a cumulative GPA of 3.00 or better.

Program Structure

Qualifying Courses

Normally, students who require qualifying courses will have to complete them prior to beginning their program of study.

COMM 610 Basic Quantitative Skills for Administration (3 credits)
Refer to page 581 for course description.

Courses in the John Molson MBA Program

After successfully completing the qualifying course (if necessary), students in the regular MBA will complete a 57-credit program, and students in the accelerated MBA will complete a 45-credit program comprising the core courses and one of three elective options. Full-time students in the regular MBA will normally complete the program within sixteen months to two years of their first registration and full-time students in the accelerated MBA will normally complete the program within one year.

The first part of the program is made up of core courses that are mandatory for all regular MBA students. Students in the accelerated MBA program are required to complete eight of these courses including MBA 625. The required courses are chosen in consultation with the MBA Program Director, based on the student's academic background.

All students may be permitted to substitute other graduate-level courses, as described under Course Substitution: MBA option for DIA/DSA students; MBA option for Diploma in Chartered Accountancy students. The purpose of these

core courses is to provide an integrated and rigorous body of functionally oriented skills and knowledge as a foundation for the second part of the program, when students can choose one of three options.

Part I - Core Courses

Regular MBA	36 credits
Accelerated MBA	24 credits

MBA 606 Managerial Economics (3 credits)
This course provides the theory and the practical techniques for economic decision-making by business firms and other institutions. Topics covered include demand theory, cost theory and estimation, and pricing theory and practice. These issues are discussed within a firm-theoretic framework and business applications of the theory are emphasized.

MBA 607 Financial Accounting for Managerial Decisions (3 credits)
This course provides an overview of the corporate external financial reporting system and of the managerial objectives of corporate financial statements. The roles of management, government and auditors are examined. The specific information needs of the principal users are reviewed. The process for developing and enforcing generally accepted accounting principles (GAAP) and reporting standards, both legal and professional, is examined. At the outset, this includes a review of the financial accounting model that underlies traditional corporate financial statements. However, emphasis is placed on examining selected major GAAPs and comparing them to actual corporate reporting practices.

MBA 608 Statistical Models for Business Decisions (3 credits)
This course focuses on the applications of statistical techniques that are frequently used in data analysis and managerial decision-making. Topics include inference on means of several populations; correlation and multiple regression analysis; elements of logistic regression; time series regression and forecasting. Applications of these techniques in various businesses functions such as finance, human resources management, managerial accounting, marketing, and operations management are studied through problems and cases using computers. *Prerequisite:* COMM 610 or equivalent.

MBA 609 Organizational Behaviour (3 credits)
This course is concerned with understanding and managing individual and group behaviour in organizations using social and behavioural principles. Particular emphasis is placed on identifying and diagnosing the causes and consequences of effective and ineffective behaviour in organizations. Topics covered include perception, work attitudes, motivation, leadership, some aspects of decision-making, and group dynamics including intra- and intergroup processes.

Instruction typically includes a mixture of discussion, case analyses and experiential exercises.

MBA 610 Marketing Management (3 credits)
This course focuses generally on the strategic role of marketing for any firm. The primary objective is the cultivation of marketing management skills and perspectives. All aspects of the marketing management process are covered. Particular attention is directed to the analysis of marketing opportunities, the researching and selection of target markets, the designing of marketing strategies, the planning of marketing programs, and the organizing, implementing and controlling of marketing effort. A blend of lectures, cases, readings and papers are used to achieve the course objectives.

MBA 614 Financial Management (3 credits)
This course concentrates on the investment and financing decisions of financial managers in the framework of identifying and undertaking business opportunities that maximize the value of the enterprise. The objective is to develop an appreciation of the interplay of expected returns and risk in determining the value contribution of business activities and in the pricing of financial instruments. The core lecture topics include capital budgeting, the valuation of stocks and bonds, portfolio theory, asset-pricing models, and capital structure and dividend policy issues. Valuation concepts are also applied to other topics such as options, futures, mergers and acquisitions, leasing and pensions. *Prerequisite:* MBA 607; *Co-requisite:* MBA 608.

MBA 615 Management Information Systems (3 credits)
This course provides technical and managerial tools and approaches that are critical to understanding the multi-faceted applications and strategic potential of computer-based information systems in organizations. The aims of the course are to expose students to the capabilities of computers as information processors and decision support tools, and to introduce the fundamentals of Management Information Systems. These fundamentals are studied at the personal and organizational levels within a systems analysis and design framework. Use of software tools for solving different types of information processing problems in business is demonstrated. Recent developments in decision support and expert systems are also discussed. Linkage and integration provided by information systems for the various units and functions of organizations are emphasized. The course uses case studies to highlight various development, implementation and operational issues in Management Information Systems.

MBA 616 Operations Management (3 credits)
This course concentrates on the quantitative and qualitative techniques used in business to achieve efficient and effective utilization of scarce resources. Management and control of labour, machinery, material, money, planning, information and time resources in manufacturing and the service sectors are studied. Among the topics covered are linear programming, aggregate planning,

scheduling, materials management, quality control and project management. The interactions with other functional areas, such as information systems, marketing, accounting and finance, are illustrated through case studies. Recent developments in the area are introduced within the context of manufacturing and service strategies. Modelling and implementation aspects of operations management are emphasized throughout the course. A computer package is used as an aid for the solution phase of the operations management problem-solving process. *Co-requisite:* MBA 608.

MBA 618 National and International Economics (3 credits)
This course explores the causes of economic growth and decline in firms and in industries, with special emphasis on international factors. Topics discussed include the constituent parts of national output, inflation and unemployment, and money and interest rates. Coverage also includes foreign exchange rate determination, balance of payments issues and the theory of international trade.

MBA 622 Business Policy and Strategy (3 credits)
This course integrates the core functional disciplines of business within a strategic perspective. The course introduces several strategic management concepts including industry analysis and dynamics, the organizational resource audit, strategic typologies, the role of the general manager and the management of strategic transformations. The principle goal is to develop and enhance student ability in problem identification, environmental and organizational analyses, strategic alternative formulation, and action implementation. The pedagogy of the course is based upon comprehensive case studies that deal with strategic issues, in a variety of contemporary business contexts. *Prerequisites:* MBA 606, MBA 609, MBA 610, MBA 614, MBA 615 and MBA 616.

MBA 625 Strategy and Social Responsibility in Action (3 credits)
This course explores the process by which strategic intent and strategy are linked to managerial action in a context of social responsibility. The course centers in on both the development of strategic action in response to issues emanating in the broader external environment as well as issues concerned with the implementation of action programs in contemporary organizations. Specific topics concerned with the external environment include managing social responsibility, economic and social regulations and technological change. Using major organizational theory concepts as a framework, the course also examines how strategic intent can be linked to functional strategies, organizational structure, performance evaluation and management systems. A principal objective of the course is to enhance the student's ability to make decisions through case studies, student presentations, lectures, and group consulting projects. *Prerequisite*: MBA 622.

MBA 628 Management Accounting (3 credits)
This course focuses on the use of accounting data and analytical techniques to provide information for internal decision-making in organizations. The main topics in the course are the nature and behaviour of costs, types of costing systems, short-run and long-run decision-making, budgeting, responsibility accounting, and control systems. The emphasis is on the point of view of the manager or the user of information. *Prerequisite*: MBA 607.

Part II - Electives

Option A: Course Work

7 elective courses	21 credits

Option B: Research Paper

5 elective courses	15 credits
MBA 631: MBA Research Paper	6 credits
	21 credits

MBA 631 MBA Research Paper (6 credits)
The objective of the research paper is to provide each student with an opportunity to carry out an in-depth investigation of a selected business problem, working on a one-to-one basis with a faculty member. Research papers may concentrate on a specialized area or they may be interdisciplinary in scope. The investigation will normally extend over two terms.

Option C: Practicum

6 elective courses	18 credits
MBA 632: MBA Practicum Project	3 credits
	21 credits

MBA 632 MBA Practicum Project (3 credits)
Although this course is not limited to full-time students, part-time students wishing to be considered must be available during the day throughout the Fall term to attend the necessary course lectures and carry out field work assignments. The objective of the Practicum Project is to provide students with an opportunity to carry out an in-depth investigation of a complex business problem within a corporation or other economic entity. The Project is intended to enhance students' diagnostic skills, improve their ability to develop innovative and practical responses to complex interdisciplinary problems or entrepreneurial opportunities, sharpen their abilities in working effectively with executives and other group members and hone their communication skills. Students work together in small groups, within the framework of a course that extends over two terms. The course includes lectures and readings on relevant consulting skills, as well as presentations and discussions with executives and with other participants in the course. The number of sections offered in a given year will be limited.

Elective Courses

Some of these courses may not be available in a given academic year. Special Topics courses are offered by most departments. Detailed information as to availability and content may be obtained from the MBA Program Office.

Specializations

- Supply Chain Management
- Global Business
- Corporate Governance
- Entrepreneurship
- Investment Finance

In addition to Options A, B or C, a student may elect to follow a specialization in Part II of the MBA Program. Areas of specialization reflect recent trends in business administration, such as Supply Chain Management, Global Business, Corporate Governance, Entrepreneurship, and Investment Finance.

Students choosing to do a specialization are required to take a minimum of 12 credits (4 courses) in an area of defined specialization. These courses will be taken from the existing pool of MBA courses. Students should consult the MBA Handbook to obtain the exact list of the specific courses within each specialization that are offered in the current year.

To add flexibility, a student could take a maximum of ONE (3-credit) elective in the area of specialization from another program at Concordia, or at another university, (with the prior approval of the MBA Program Director).

All students will receive the same MBA regardless of whether they complete a specialization.

Supply Chain Management

Topics in this specialization may cover the following: Supply Chain Quality Management; E-Procurement Project Management; Integrated Systems; Supply Chain Operations; Supply Chain Logistics; and Relationship Marketing.

Global Business

Topics in this specialization may cover the following: International Financial Management; Managing International Business; International Business Live Case Analysis; International Marketing; and International Business.

In this specialization, students may have the opportunity to take a language course and to go on an international exchange.

Corporate Governance

Topics in this specialization may cover the following: Fraud Examination; Commercial Contract Law; Litigation Management; Corporate Governance; Corporate Information Systems Management; and Business Ethics.

Entrepreneurship

Topics in this specialization may cover the following: Business Valuations; Performance Management; Fraud Examination; Negotiation Management, Analysis and Support; Project Management; Venture Capital Finance; Entrepreneurship and Small Business; Commercial Contract Law; Organizational Strategic Consulting; International Business Live Case Analysis; Sales Management and Personal Selling; Relationship Marketing; and Practicum Consulting Project.

Investment Finance

Topics in this specialization may cover the following: Business Valuations; International Finance Management; Seminar in Portfolio Management; Options and Futures; Real Estate Finance; and Commercial Contract Law.

List of Elective Courses

In addition to the elective courses listed below, MBA students may also, subject to approval, take courses in the M.Sc. in Administration Program, the Graduate Diploma in Administration, the Graduate Diploma in Sport Administration, the Graduate Certificate in e-Business, or follow graduate courses offered outside the John Molson School of Business.

MBA 627 Seminar in International Business
MBA 691 Seminar in Business Ethics
MBA 695 Seminar in Special Topics (*)

Accountancy

ACCO 661 Seminar in Financial Accounting
ACCO 671 Seminar in Managerial Accounting
ACCO 691 Seminar in Business Valuations
ACCO 695 Seminar in Special Topics (*)

Decision Sciences and Management Information Systems

DESC 651 Seminar in Statistical Estimation and Forecasting for Business
DESC 653 Seminar in Business Applications of Linear Statistical Models
DESC 654 Seminar in Business Applications of Multivariate Analysis
DESC 661 Seminar in Decision Support Systems in Business

DESC 662 Seminar in Office Automation and Telecommunications
DESC 663 Seminar in Corporate Information Systems Management
DESC 695 Seminar in Special Topics (*)

Finance

FINA 651 Seminar in Financial Intermediaries
FINA 663 Seminar in Corporate Finance
FINA 680 Seminar in Short-Term Financial Management
FINA 682 Seminar in International Financial Management
FINA 683 Seminar in Portfolio Management
FINA 685 Seminar in Options and Futures
FINA 687 Seminar in Derivatives and Risk Management
FINA 690 Seminar in Investments
FINA 691 Seminar in Real Estate Finance
FINA 695 Seminar in Special Topics (*)

Management

MANA 661 Seminar in Production Management
MANA 663 Seminar in Labour Relations
MANA 664 Seminar in Corporate Law
MANA 681 Seminar in the Management of International Business
MANA 682 Seminar in Human Resources Management
MANA 683 Seminar in Entrepreneurship and Small Business
MANA 691 Seminar in Strategies in Action: Case Competition
MANA 692 Seminar in Commercial Contract Law
MANA 695 Seminar in Special Topics (*)

Marketing

MARK 661 Seminar in Distribution Systems
MARK 664 Seminar in Advertising Management
MARK 671 Seminar in Consumer Behaviour
MARK 672 Seminar in Strategic Marketing
MARK 681 Seminar in International Marketing
MARK 683 Seminar in International Transportation and Distribution
MARK 691 Seminar in Pharmaceutical Marketing
MARK 695 Seminar in Special Topics (*)

(*) Subject matter will vary from term to term and students may take more than one of these courses, provided that course content has changed. In such cases, the student's record will be automatically modified to 696, 697, etc. to reflect this change in content.

MBA Co-operative Option

The MBA Co-operative Option is non-credit and is offered to all students who are enrolled in the John Molson MBA Program. Students accepted into the Co-op must be registered as full-time, have completed 24 credits, and maintain a cumulative GPA of 3.30 or better.

Students may do a minimum of one work term (four months) to a maximum of three work terms (twelve months). Students must return to full-time study for their last term.

1550 de Maisonneuve, GM 407
Tel.: 848-2424 ext. 3622; Fax: 848-3696
e-mail: emba@jmsb.concordia.ca

Master of/Magisteriate in Business Administration (Executive Option)

Director: Bryan Barbieri; *Assistant Director:* Sharon Nelson

This two-year intensive program is designed specifically for mid-career managers who wish to pursue graduate level business education without interrupting their business careers. Most participants are sponsored by their employers, and this commitment is seen as an important factor in relating academic concepts to current business practice. Each participant brings particular expertise to the program, adding to the depth of discussions, and enriching the classroom experience for all concerned.

In addition to the admission requirements listed below, serious consideration is given to the backgrounds and career objectives of each applicant before a class is formed. Applicants are accepted until June 1 each year, or until a full class has been identified and accepted for the following September.

The two-year program is offered during the university's regular academic year. Classes are held one day per week, on alternate Fridays and Saturdays. Entry to the program occurs in late August only.

Program Objectives

Modern organizations are facing increasing global, technological and competitive challenges. The Concordia Executive MBA Program is designed to assist industry leaders in acquiring knowledge, skills and attitudes to guide their organizations through the complexities and challenges of tomorrow's environment.

Admission Requirements. In collaboration with their corporations or agencies, new students are admitted into the Executive MBA Program provided they satisfy the following prerequisites:

1. substantial experience at the senior management level;
2. sponsorship by employer who agrees to support the involvement of the employee to facilitate successful completion of the program when applicable;
3. bachelor's degree or equivalent qualifications (in certain cases, consideration will be given to candidates who do not hold a bachelor's degree);
4. satisfactory performance in the Graduate Management Admissions Test (GMAT);
5. two letters of reference from work-related or academic sources;

6. a non-refundable $50.00 application fee;
7. competence in business mathematics (*);

(*) Intensive workshops are offered to meet individual needs in Mathematics as well as in Accountancy when justified by demand.

Application Deadline. June 1.

Academic Regulations

1. **Transfer credits.** Because of the integral structure of the EMBA Program, neither transfer credits nor course exemptions will be granted.

2. **Attendance.** Students are expected to attend all classes. An occasional absence will be permitted, but beyond that a student will be warned and then placed on probationary standing.

3. **GPA Requirement.** The academic performance of each EMBA student will be reviewed by the EMBA committee at the end of each term. To be considered in good standing at this review, the student must, in the preceding term, have:
   a. successfully completed the required course load;
   b. achieved a grade point average of 3.00 or better.

4. **F Rule.** Students who have not fulfilled these conditions will, at the discretion of the EMBA committee, be considered either a student on probationary standing or a failed student. Students who have failed a course will normally be considered a failed student. Students on probationary standing will have specific requirements set as a condition of being returned to good standing. If these requirements are not met, the student will be considered a failed student. Failed students will be withdrawn from the program.

   Students who have not fulfilled the requirements for good standing in their final review have not fulfilled the degree requirements. In such cases, the requirements which they must meet in order to be reinstated as students in good standing, and thus, to be considered for graduation, will be determined by the EMBA committee.

5. **Graduation Requirement.** In order to graduate, students must have a cumulative GPA of 3.00.

Requirements for the Degree

Credits. A fully-qualified candidate is required to complete a minimum of 54 credits. Students must also participate in a required international study trip.

Required Courses

EMBA 600 Management Skills Seminar (1.5 credits)
Offered during orientation week, this seminar focuses on managerial and interpersonal skills that are critical for the development of managerial effectiveness. During the seminar participants will be exposed to recent thinking on team building, communication theory, conflict management and negotiating. Theory will be complemented by applications in specific organizational contexts and experiential exercises.

EMBA 601 Leadership Seminar (1.5 credits)
This seminar which takes place at an off site retreat serves as a capstone course for the program. It allows participants to reflect on their Executive MBA experience, and it provides an opportunity for them to assess how they have integrated the material which has been studied during the program. Particular emphasis is placed on the leadership skills required to be the leader of an organization. Cases and other exercises are used so that participants can evaluate their own leadership skills and where they are at with respect to their own career objectives.

EMBA 661 Domestic and International Economics (3 credits)
This course develops the economic foundations of managerial decisions. Topics include the pricing decision under various market structures - monopoly, oligopoly and competition, an introduction to macro-economics and government, international economic and financial systems, trade theory, governmental international economic policies and the theory of exchange rates are discussed.

EMBA 662 Principles of Accounting (3 credits)
This course introduces the theory and practice of corporate accounting and reporting systems for external users. Emphasis is placed on the importance of accounting information for decision makers.

EMBA 663 Business Statistics (3 credits)
This course introduces the principles of statistics, probability and sampling theories. Estimation and hypothesis testing are introduced followed by an introduction to multiple regression and time series analysis. Students are also introduced to quantitative business research methodology.

EMBA 664 Organizational Behaviour (3 credits)
The organizational behaviour aspect of this course focuses on individual and group levels of behaviour. This course also focuses on interactions of behavioural phenomena among these levels. Concepts such as motivation, leadership and group behaviour will be thoroughly discussed, and their relevance to organizational behaviour will be examined. The organizational development aspect concerns facilitating and managing change in organizations. Students will acquire an understanding of change processes,

considerable knowledge and some skills about organizational diagnosis, action planning and constancy.

EMBA 671 Financial Management (3 credits)
This course provides the foundations for the management of an organization's financial resources. It begins with a discussion of the time value of money, theories of interest rates, risk-return relationships and asset pricing in competitive markets, and then introduces the principles of capital budgeting, financing decisions of firms, and financial derivatives. It focuses on two of the major entrepreneurial decision making challenges, initial public offerings and the practical aspects of mergers and acquisitions.

EMBA 672 Strategy and Competition (1.5 credits)
This course is designed to develop a general management perspective within the context of current strategic management concepts and techniques. The concept of strategy is the central theme of this course, which assists in the integration of materials covered in other courses of the EMBA program. This course focuses on strategic analysis, including the assessment and the formulation side of the strategy process. The specific objectives of the course are (1) to develop an understanding of the literature and key concepts of contemporary strategic management, and the strategy formulation process, (2) to develop an analytical approach to the study of a firm, its strategy and its industry, (3) to support the development of effective strategy analysis skills.

EMBA 673 Marketing Management (3 credits)
This course examines the nature of marketing and the interrelationships that are operative within the marketing process both externally as related to society and the marketplace, and internally as related to the organization and planning function of the firm. Particular attention is directed at understanding and appreciating basic marketing concepts and the behavioural aspects of marketing, as well as to their application in analyzing marketing opportunities, researching and selecting target markets, and designing marketing programs. It deals with entry strategies for new markets, both domestic and international, market positioning, strategic direction, strategic planning and selecting a financing approach. Lastly, the course examines how marketing policies for domestic as well as international markets are developed.

EMBA 675 Operations Management (3 credits)
Approaches and techniques for allocating scarce resources in manufacturing and service industries are presented. Among the topics covered are forecasting, aggregate planning, materials management, scheduling, quality management, waiting lines and project management. Strategic issues are discussed within the context of supply chain management. Interactions with other business areas are emphasized through cases.

EMBA 676 International Study Trip (1.5 credits)
Participants will visit one or more countries to meet with managers, government officials, and academics to understand the business environment of those countries as well as to carry out a team project in those countries.

EMBA 677 International Business I: The Environment of World Business (1.5 credits)
This course focuses on two aspects of managing in an international business environment. Participants explore the idea of culture, how culture has an impact in relationships between people in managerial situations, how we can understand culture and finally, how we can manage effectively in cross cultural situations. In addition, the course focuses on managing international expansion of business through trade and investment and the role of governments' trade and investment policies in the development of international markets.

EMBA 681 Corporate Finance (3 credits)
This course first focuses on the principles of investments, raising funds in domestic and international markets, and hedging financial risks (interest exchange rates) in markets and then introduces students to complex financial issues like corporate reorganization, including acquisitions.

EMBA 682 Managerial Accounting (3 credits)
This course considers the development and use of external financial accounting as well as internal cost accounting information for managerial analysis and decision making. Entrepreneurial accounting addresses major challenges facing management (1) buying, selling and merging companies, (2) locating and maintaining appropriate sources of funding, (3) using funds wisely.

EMBA 685 Managing Information Technology (3 credits)
Prepares students to play leading roles in the management of IT. Introduces students to the issues and challenges faced by managers in the deployment of information systems and information technology in a corporate environment. On completing this course students should be more familiar with issues related to managing telecommunications and distributed systems, information systems planning, development and implementation, database management, decision support systems, information technology outsourcing, knowledge management systems, implementation of e-business systems and risk, controls and security measures.

EMBA 687 Human Resource Management (3 credits)
This course addresses such issues as organizational structure and design, organizational change, and organizational development. It deals with human resource management, including strategy and planning. It looks also at such topics as recruitment, selection, and international assignments. This course concludes by examining several topical aspects of industrial relations. It deals with three main issues regarding negotiations. First, negotiation and what it

involves. Second, skills people need to carry out negotiations. Third, the feelings, values and beliefs people have about proper conduct in negotiations and how the actions of others in negotiation clash or appear to clash with them.

EMBA 690 Management Consulting Project (3 credits)
The purpose of this course is to have students develop an independent consulting project dealing with an issue that an organization has selected for attention. Students working in assigned groups will be responsible for determining the scope of the project following consultations with the professor supervising this course. It is anticipated that many students will select their own organizations as the target organization for this project. The project is intended to enhance students' diagnostic skills and their ability to develop innovative and practical responses to complex disciplinary problems. The results of the consulting project will be presented to the EMBA class and a report will be submitted to the supervising professor.

EMBA 693a Technology Management (1.5 credits)
This seminar which is designed as a general management course examines a number of issues concerning the development and management of technology. In particular, the course will look at the challenges of managing breakthrough innovations and technology issues affecting firms operating in advanced technology markets. It also examines the specific needs and unique operating characteristics of successful advanced technology firms.

EMBA 693b e-Business (1.5 credits)
This course is designed to examine the fundamental managerial issues in e-business at both the strategic and operational levels. Topics covered will include areas such as: e-business strategies and models; the role of electronic commerce technologies; intelligent systems, customer relationship management, virtual enterprises and security and ethical issues in e-business.

EMBA 694 Managing Strategic Action (1.5 credits)
This course explores the process by which strategic intent and strategy are linked to managerial action. The course focuses on both the development of strategic action in response to issues emanating in the broader external environment as well as issues concerned with the implementation of action programs in contemporary organizations.

EMBA 697 International Business II: Managing in a Global Economy
(1.5 credits)
This second course in international business focuses on issues that managers face in managing their businesses in an international environment. Participants are exposed to key aspects of international financial management, international marketing, international law and the management of multinational enterprises.

EMBA 698a Entrepreneurship and Small Family Business (1.5 credits)
The objective of this course is to introduce students to the theory and practice of entrepreneurship, family business and small business management. Students can expect to concurrently evaluate data and/or decisions in several areas of entrepreneurship and small business and to apply sound, relevant theoretical concepts to the problems and issues that develop.

EMBA 698b Governance (1.5 credits)
This course will familiarize students with the main issues in Corporate Governance and provides a multi-disciplinary framework to analyze those issues. It looks at the relationship among stakeholders to determine and control the strategic direction and performance of organizations. Emphasis is place on shareholders, management, and boards of directors. The course attempts to bring together the different approaches to governance used in finance, economics, organizational behaviour and law.

EMBA 699 Contemporary Issues in Business (1.5 credits)
The purpose of this course is to allow flexibility in the Executive MBA offerings and to provide a forum for the discussion of current issues in business. The specific topic of this course will be determined before the start of the second year of the program following consultations with members of the EMBA class.

Note: Students entering the EMBA Program prior to 2004 are required to fulfill the degree requirements as stipulated in the 2003-2004 Graduate Calendar.

Tuition Fees

Tuition fees for the Executive MBA Program are not covered by the regular university fee structure. The fees are $52,000 (subject to review), for the full two-year Program. In addition to the normal costs, this fee covers an international study trip, books and course notes, software, meals on class days, and other services to students. A $2,000 non-refundable deposit must be paid on acceptance into the program. The balance of the first year fee, to equal half the total amount, must be paid by the end of the second week of August of the year of entry. The total fee for the second year must be paid by the end of the second week of August of that year. If a student withdraws from the program during the month of September, a refund of $3,000 for the applicable fees will be made by the university. A student who withdraws at any time after the end of September forfeits the full amount of the annual fees. Notice of withdrawal must be made in writing to the director to the program.

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Tel.: 848-2424 ext. 2930; Fax: 848-2931

Master of/Magisteriate in Business Administration (International Aviation)

Director: Dr. Isabelle Dostaler; *Assistant Director:* Angela Usas

The International Aviation MBA is an intensive program with four format options to suit the needs of the student.

a. Full-time, intensive, resident format that allows students to be back on the job in one year. (**Please note that admission is suspended into the Full-time format until further notice**).
b. Global Executive Aviation MBA (GAMBA), a flexible two-year format that allows an individual to complete program requirements while maintaining a full-time career, using state-of-the-art distance technology.
c. Diploma in Aviation Management
d. Graduate Certificate in Aviation Management

Program Objectives

The objective of the Concordia University International Aviation MBA Program is to provide aviation industry managers with state-of-the-art and comprehensive management tools, principles, and techniques to enhance their capability to perform successfully in a complex, modern and fiercely competitive international aviation environment.

The program considers air transportation as a system. As a result, the *interrelationship* between the various sectors of the air transportation environment (airlines, airports, and air navigation professionals, aviation suppliers and manufacturers) is emphasized. As well, students with managerial experience in the various sectors are typically represented in the classroom which contributes to a rich learning environment for aviation professionals.

Admission Requirements. New students are admitted into the International Aviation MBA Program provided they satisfy the following prerequisites:

1. relevant professional experience;
2. bachelor's qualifications (in certain cases, consideration will be given to candidates who do not hold a bachelor's degree);
3. satisfactory performance in the Graduate Management Admissions Test (GMAT);
4. two letters of reference from work-related or academic sources;
5. statement of purpose.

Competence in Mathematics, Statistics, and Computer Skills. Students are required to have these skills before they enter the program or to complete

appropriate courses in their first term. They must take these courses in addition to their regular program requirements.

Application Deadlines. To ensure proper processing and to allow for immigration procedures, applicants are encouraged to submit their complete M.B.A. (International Aviation Option) application prior to June 15 (resident format) and February 15 (Global Executive Format - GAMBA), although every effort will be made to accommodate those received after the deadline.

Application. A detailed description of the program can be obtained from the International Aviation MBA Program. Applicants can apply online at: http://welcome.concordia.ca

Academic Regulations

1. **Transfer credits.** Because of the integral structure of the IAMBA program, neither transfer credits nor course exemptions are typically granted. However, they are considered on an individual basis.

2. **Attendance.** Students are expected to attend all classes. An occasional absence will be permitted, but beyond that a student will be warned and then placed on probationary standing.

3. **GPA Requirement.** The academic performance of each AMBA student will be reviewed by the AMBA committee at the end of each term. To be considered in good standing at this review, the student must, in the preceding term, have: (a) successfully completed the required course load; (b) achieved a grade point average of 3.00 or better.

4. **F Rule.** Students who have not fulfilled these conditions will, at the discretion of the AMBA committee, be considered either a student on probationary standing or a failed student. Students who have failed a course will normally be considered a failed student. Students on probationary standing will have specific requirements set as a condition of being returned to good standing. If these requirements are not met, the student will be considered a failed student. Failed students will be withdrawn from the program.

   Students who have not fulfilled the requirements for good standing in their final review have not fulfilled the degree requirements. In such cases, the requirements that they must meet in order to be reinstated as students in good standing, and thus to be considered for graduation, will be determined by the AMBA committee.

5. **Graduation Requirement.** In order to graduate, students must have a cumulative GPA of 3.00.

Master of Business Administration (International Aviation Option)

Requirements for the Degree

Credits. A fully-qualified candidate is required to complete a minimum of 54 credits.

Courses

Core Courses

AMBA 611 Financial Accounting
AMBA 612 Organizational Behaviour
AMBA 613 Managerial Statistics
AMBA 625 Marketing Management
AMBA 626 Managerial Accounting
AMBA 627 Financial Management
AMBA 628 Business Economics
AMBA 634 Operations Management

Specialized Courses

AMBA 614 Human Resource Management
AMBA 629 Strategic Management
AMBA 635 Air Transportation Economics and Finance
AMBA 636 Information Technology
AMBA 638 Airport Management and Operations
AMBA 639 Air Carrier Planning and Operations
AMBA 645 Aero-political and Legal Environment
AMBA 654 Aviation Enterprise Management
AMBA 655 Airline Management and Marketing
AMBA 656 Seminar on Air Transportation System
AMBA 695 Seminar in Special Topics (*)

(*) When available **AMBA 695 Seminar in Special Topics** will be offered as a substitution for any of the IAMBA specialized courses at the discretion of the program director. AMBA 695 topics will vary from term to term and students may take more than one of these courses provided that course content has changed.
Note: The core courses in the Resident delivery option are taken within the John Molson MBA Program and are general in nature.

AMBA 611 Financial Accounting
This course examines the objectives, concepts and principles of the financial statements prepared for users external to the business. An overview of statement preparation is followed by an in-depth study of selected financial reporting issues. Throughout, the emphasis is on the development and utilization of informed judgment in the use of financial statement information in the airline

and aviation industry. Financial statements from airlines, airports and corporatized air navigation organizations are used as examples.

AMBA 612 Organizational Behaviour
Organizational Behaviour is concerned with the behaviour and attitudes of individuals and groups in organizations and with how these organizations are structured to achieve their goals. The course relies heavily on the contributions of psychology, sociology and anthropology, and strong emphasis is placed in management decisions that contribute to organizational effectiveness. Topics to be covered typically include leadership, motivation, job design, reward systems, control systems, group dynamics, communication, decision-making, conflict, politics, organizational design, and organizational culture. The course also examines leadership and management of change issues arising from the growth of market forces in the aviation system.

AMBA 613 Managerial Statistics
The objective of this course is to introduce managers to applications of managerial statistics to business decision-making. Topics include descriptive and inferential statistical techniques, sample theory and design, regression and correlation, model building, time series and index numbers, and forecasting. The usefulness of these techniques in business will be demonstrated through the use of problems, cases and computer applications from the aviation industry.

AMBA 614 Human Resource Management
The purpose of this course is to examine the human resource function in isolation and also as an interdependent managerial process within aviation industry organizations. The course will examine human resource planning, recruitment, selection, compensation, training/development, quality of work life, and health and safety issues. Attention is given to the growing human resources function in developing staff interpersonal skills and building organizational competencies in passenger and human services. The course will use theory, readings, cases, group discussion and experiential methodology to help illuminate the function and tasks of a human resources department.

AMBA 625 Marketing Management
This course is designed to give the manager an overview of the nature and scope of the marketing function and the environment affecting marketing managers. The marketing environment, marketing strategies, legal environment, airline marketing, and the marketing mix applicable to aviation enterprises will be covered in this course. The relationship between strategy, marketing and public relations functions within aviation enterprises will be discussed. Readings, lectures and cases pertaining to the aviation business environment will be used.

AMBA 626 Managerial Accounting
This course is designed to improve managers' abilities to use accounting data and analytical techniques for internal decision-making in their organizations.

The main topics in this course are the nature and behaviour of costs, route systems and operating costs, short-run and long-run decision-making, benchmarking, balanced scorecard, budgeting, responsibility accounting and control systems. The emphasis is on the point of view of the aviation enterprise manager as the user of the information.

AMBA 627 Financial Management
An integrated course covering the financing, investment and dividend choices of the firm. Topics covered include the capital markets, capital budgeting, the cost of capital, capital structure, dividend policy, portfolio theory and valuation models. Principles of risk management will also be addressed. Particular attention will be given to the study of options for airline fleet renewal, capital budgeting, leasing, and financing aircraft acquisitions as well as contemporary airport and air navigation infrastructure financing schemes.

AMBA 628 Business Economics
This course shows how Economic Theory and Analysis can help managers make decisions in an uncertain environment. In the first part of the course we use Microeconomic Theory to examine supply and demand and to analyze how competitive strategy is influenced by a market's structure. In the second part of the course we study Macroeconomic Theory to explain and analyze current policy issues. We examine the constituent parts of a nation's output and discuss the causes of economic growth and decline, such as inflation and unemployment. Special emphasis is placed on understanding how fiscal decisions of governments and changes in monetary policy and other factors affect individuals, particularly aviation enterprises operating in a global environment.

AMBA 629 Strategic Management
This course develops a general management perspective to assist in the integration of materials covered in other parts of the program. Attention is focused upon developing skills in competitive and industry analysis. We also focus on issues relating to strategy formation within regulated industries. Corporate governance and organization structure models of particular relevance to the aviation industry will be examined as well as the processes for managing large scale organizational change. Although some lectures will be given, concept development will take place through case discussions, readings and presentations.

AMBA 634 Operations Management
The objective of this course is to introduce airline and aviation managers to analytical decision-making in an operations research/management context. The functional aspects of aviation enterprises and the relationship of operations to the other business functions will be emphasized throughout. The course will be a combination of techniques and applications. Linear programming, the transportation algorithm, Bayesian analyses and project management will be

the techniques emphasized. The techniques are illustrated throughout with applications related to decision-making in airlines and airport organizations.

AMBA 635 Air Transportation Economics and Finance
This course has two objectives. First, the course will introduce the economics of aviation, specifically markets in aviation, demand for air transportation, airline market competition, airline pricing, airline and aircraft operating cost models as well as airport and air navigation costs and economic issues. Second, the objective is to examine financial issues related to aircraft acquisition and sales as well as infrastructure financing (runways, terminals, hangars, air navigation control facilities) and pricing of the aviation services this infrastructure provides. The challenges arising from the massive investment requirements associated with infrastructure capacity expansion and introduction of new technologies in air navigation will be examined.

AMBA 636 Information Technology
The main focus of this course relates to the opportunity for strategic use of information technology within aviation enterprises. The evolution and strategically competitive role of the Information Technology function is also examined in this course. Topics include user satisfaction and demand for information, the development of computerized Decision Support Systems, the management of Information Systems, the management of technology, the relationship between automation and productivity, data security and justification of IT related budgets. Emphasis throughout the course will be on aviation-related applications, including new technologies aimed at facilitating the processing of aircraft, passengers and cargo managing service levels and increasing net revenues.

AMBA 638 Airport Management and Operations
The overall course focus is the management of airports in their contemporary business environment. The material covered aims at providing a comprehensive understanding of key airport functions pertaining to commercial and technical activities. These functions are also examined from a customer service perspective. Specific attention is given to the planning and development of the airport system as well as to the optimization of airport logistics under normal and emergency operational conditions. Policy issues related to airside and landside service provision at airports are addressed. Issues relating to physical environmental impact are covered. The management of the interface with airport users such as airlines, corporate fleet and general aviation operators as well as other stakeholders is discussed. Case studies drawn from contemporary real-life situations are used throughout the course.

AMBA 639 Air Carrier Planning and Operations
This course provides a comprehensive introduction to the functional activities involved in planning and operating an airline and their integration with corporate strategies and policies. The complete airline planning process is

explored, beginning with longer-term strategic decisions about fleet planning and route development, followed by medium-term schedule planning, fleet assignment, maintenance and operational considerations. Tactical decisions concerning pricing, yield management and seat inventory control, as well as departure dispatch and irregular operations, are also examined. The focus is on state of the practice tools and decision approaches for airline planning and operations, in the context of a competitive airline environment. The operation of non-airline carriers such as corporate aviation enterprises is also discussed during this course.

AMBA 645 Aero-political and Legal Environment
This course is designed to allow students to develop an understanding of the issues facing aviation industry managers in the context of the political, legal and social environments of the industry. Policy and legal implications of the aviation system liberalization, globalization and commercialization will be discussed throughout the course. A case study involving the negotiation of a bilateral air transport agreement will be an integral part of the course. Relevant World Trade Organization policies as well as key principles of business law relevant to the commercialization of the aviation system will be discussed.

AMBA 654 Aviation Enterprise Management
This course provides understanding of aviation management as a complex business enterprise. The objective is to provide the student with a comprehensive perspective of the various business and commercial interests that need to be combined to create successful aviation ventures. Topics include governance and ownership models, overall business and financial management, marketing and promotion, commercial development, technology based revenue enhancement, boost control and productivity, financing of new aviation infrastructure, and performance management and benchmarking. The course focuses on aviation enterprises such as Fixed Based Operators, General Aviation Ventures, Corporate Aviation, and Airports.

AMBA 655 Airline Management and Marketing
The objective of this course is to extend the air carrier decision process introduced in AMBA 625 to include concepts of marketing management and product delivery to the consumer. Topics include route development, product planning, channels of distribution, airline advertising and promotion, and customer service issues. Current issues related to airline strategic alliances and new entrants are also examined. This course features a computer-based airline management simulation that integrates concepts of airline planning, operations, marketing, and strategic management. Teams of students manage hypothetical airlines, making decisions about schedules, operations, fares and marketing to maximize airline profits.

AMBA 656 Seminar on Air Transportation System
Designed to synthesize concepts presented throughout the aviation management curriculum, this course examines major issues that cut across all three commercial components of the air transportation system - air carriers, airports and air navigation services. Topics include the management of safety and security in the air transportation system, dealing with infrastructure capacity constraints and air traffic decongestion, the growth of air cargo and general aviation, the increasing environmental impacts as well as the privatization and/or commercialization of government-owned airlines, airport facilities and air navigation services. Based on recent case studies, a systems perspective is developed to analyze the interrelationships between the principal components and major players in air transportation. The course will include a management research project, which will provide students with an opportunity to investigate a topic of their choice in air transportation management.

AMBA 695 Seminar in Special Topics (*)
(*) Topic will vary from term to term and students may take more than one of these courses provided that course content has changed.

Tuition Fees

The International Aviation MBA Program is a privatized academic program. Cost of the program is $28,000 USD, which covers all student fees and course materials.

Payment Schedule for the Full-time and GAMBA Options

A $2,000 USD deposit must be paid on acceptance into the Program. $13,000 USD is payable two weeks prior to the commencement of the Program. The balance of $13,000 USD is due prior to the commencement of the third term. All payments are non refundable.

Please note that tuition fees will be calculated on a twelve month average exchange rate.

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Graduate Diploma in Aviation Management

Director: Dr. Isabelle Dostaler; *Assistant Director:* Angela Usas

Program Objectives

The graduate diploma in Aviation Management (DIAM), housed in the John Molson School of Business, offers students a choice of career options in airline management, aviation service providers, aerospace manufacturers, general and corporate aviation, aviation organizations, and the public sector. Accredited by the AACSB, the Association to Advance Collegiate Schools of Business, the DIAM Program is implementing the School's mission of educating and graduating employable students.

The specific program objectives are:
1. To provide candidates with a common core of knowledge and a sound grounding in the basic body of managerial theory in aviation and practice needed to become managers or leaders in airline management, aviation service providers, aerospace manufacturers, the general and corporate aviation sectors, aviation organizations, and the public sector.
2. To enhance the practising manager's knowledge in the application of the management sciences and technologies in various career options in aviation.
3. To encourage the pursuit of excellence and high-quality research of both a theoretical and applied nature in aviation management.
4. To graduate student who have the numeric skills, competency in communication, critical and analytical capabilities, and a degree of practical experience, which will make them effective and efficient leaders and managers in the entire spectrum of aviation-related fields.

The Diploma in Aviation Management is an intensive program with two format options to suit the needs of the student:
a. Resident, intensive format. (**Please note that admission is suspended into the Resident format until further notice**).
b. Global Executive DIAM, a flexible format that allows an individual to complete program requirements while maintaining a full-time career, using state-of-the-art distance technology.

Admission Requirements. Applicants must possess a bachelor's degree with high academic standing, or equivalent qualifications from a recognized university. Applicants must also possess the equivalent body of knowledge of the core courses required in Concordia's IAMBA Program, having acquired such knowledge at the graduate level (e.g., Master of Business Administration) or through a very high quality undergraduate degree in Management or related

field (e.g., Bachelor of Commerce). The applicants are evaluated according to the following:

1. academic standing in their undergraduate and/or graduate studies;
2. satisfactory performance on the Graduate Management Admissions Test (GMAT). The Graduate Record Examination (GRE) will also be considered. Students with master's or doctoral degrees or students who are enrolled in an accredited master's degree and approved by the DIAM Admissions Committee who do not wish to pursue a master's program within the School may be exempted from taking such tests at the discretion of the Admissions Committee;
3. relevant professional experience;
4. two letters of recommendation;
5. statement of purpose.

Competence in Mathematics, Statistics, and Computer Skills. Students are required to have these skills before they enter the program or to complete appropriate courses in their first term. They must take these courses in addition to their regular program requirements.

Application. A detailed description of the program can be obtained from the International Aviation MBA Program. Applicants can apply online at: http://welcome.concordia.ca/.

Application Deadline. January 15.

Academic Regulations

1. **Residence Requirements.** It is expected that full-time students complete the program within minimum two terms, and part-time students complete it within four terms, from the initial registration into the program.

2. **Program Structure.** The program consists of ten courses (30 credits). Students must register for courses according to the sequence specified by the program.

3. **Course Load for Full-time Students.** Students must register for a total of ten courses in two terms.

4. **Course Load for Part-time Students.** Students who are not full-time as described above are classified as part-time students. They must complete the DIAM Program within four terms.

5. **Academic Standing.** The scholastic performance of all students will be reviewed on a regular basis at the end of each term. This assessment is based on the final grades of the courses completed during the term. The purpose of the review is to monitor the students' status and progress, to maintain the

standards expected by the John Molson School of Business, and to assist students in achieving success in the program.
To be considered in good standing at such review, a student must have done the following:
a. successfully completed the required course load, and
b. achieved a grade point average (GPA) of 3.00 or better since the previous review or since admission in the case of the first review.

Potential graduates who have not fulfilled the requirements for good standing must apply to the DIAM Program Committee to determine the requirements that they must meet in order to be reinstated as students in good standing and, thus, be considered for graduation.

6. **Conditional Standing.** Students with no failures on record but who still have not met the conditions for good standing will be placed on conditional standing.

   Students on conditional standing will be required to achieve a GPA of 3.00 or better in the courses taken during the conditional period and achieve no individual grade lower than a B-. Additional requirements may be specified in individual cases.

   Students who do not meet the requirements of their conditional standing are considered failed students and are withdrawn from the program. They may apply in writing for reinstatement to the Program Committee.

7. **Failure Regulations.** Students who either fail one or more courses in the program or fail to meet the conditions of their conditional standing are withdrawn from the program. They may apply in writing for reinstatement to the Program Committee.

8. **Graduation Requirement.** In order to graduate, students must have a cumulative GPA of 3.00 and have completed all course requirement.

Requirements for the Diploma

Ten of the following courses are required for the successful completion of the Diploma in Aviation Management.

AMBA 614 Human Resources Management (3 credits)
AMBA 629 Strategic Management (3 credits)
AMBA 635 Air Transportation Economics and Finance (3 credits)
AMBA 636 Information Technology (3 credits)
AMBA 638 Airport Management and Operations (3 credits)
AMBA 639 Air Carrier Planning and Operations (3 credits)
AMBA 645 Aero-political and Legal Environment (3 credits)

AMBA 654 Aviation Enterprise Management (3 credits)
AMBA 655 Airline Management and Marketing (3 credits)
AMBA 656 Seminar on Air Transportation System (3 credits)
AMBA 695 Seminar in Special Topics (*) (3 credits)

(*) Topic will vary from term to term and students may take more than one of these courses provided that course content has changed.

Tuition Fees

The International Aviation Diploma Program is a privatized academic program. Cost of the program is $21,000 USD, which covers all student fees and course materials.

Payment Schedule for the Diploma Program

A $2,000 USD deposit must be paid on acceptance into the Diploma Program. The balance of $19,000 USD is payable two weeks prior to the commencement of the Program. All payments are non refundable.

Please note that tuition fees will be calculated on a twelve month average exchange rate.

1550 de Maisonneuve W. GM 409
Tel.: 848-2424 ext. 2930; Fax: 848-2931

Graduate Certificate in Aviation Management

Director: Dr. Isabelle Dostaler; *Assistant Director:* Angela Usas

Program Objectives

The Graduate Certificate in Aviation Management (CIAM) provides those interested in aviation management with a solid training in the fundamentals of aviation management, airline management, aviation marketing, airport management, aviation law and insurance, aviation technology management, aviation operations management, and corporate aviation management. Study and research in these areas will give them a well-rounded view of the field. The program is directed toward those working in the aviation industry who would like to gain an in-depth theoretical knowledge of the field, and students who would like to gain applied knowledge of the field of aviation management.

The Certificate in Aviation Management is an intensive program with two format options to suite the needs of the student.

a. Resident, intensive format. **(Please note that admission is suspended into the Resident format until further notice).**
b. Global Executive CIAM, a flexible format that allows an individual to complete program requirements while maintaining a full-time career, using state-of-the-art distance technology.

Admission Requirements. Applicants must possess a bachelor's degree with high academic standing, or equivalent qualifications from a recognized university. Applicants must also possess the equivalent body of knowledge of the core courses required in Concordia's IAMBA Program, having acquired such knowledge either at the graduate level (e.g., Master of Business Administration) or through a very high quality undergraduate degree in Management or related field (e.g., Bachelor of Commerce). The applicants are evaluated according to the following:

1. academic standing in their undergraduate and/or graduate studies;
2. satisfactory performance on the Graduate Management Admissions Test (GMAT). The Graduate Record Examination (GRE) will also be considered. Students with master's or doctoral degrees or students who are enrolled in an accredited master's degree and approved by the CIAM Admissions Committee who do not wish to pursue a master's program within the School may be exempted from taking such tests at the discretion of the Admissions Committee;
3. relevant professional experience;
4. two letters of recommendation;

5. statement of purpose.

Competence in Mathematics, Statistics, and Computer Skills. Students are required to have these skills before they enter the program or to complete the appropriate courses in their first term. They must take these courses in addition to their regular program requirements.

Application. A detailed description of the program can be obtained from the International Aviation MBA Program. Applicants can apply online at: http://welcome.concordia.ca/.

Application Deadline. January 15.

Academic Regulations

1. **Residence Requirements.** It is expected that full-time students complete the program within one term, and part-time students complete it within two terms, from the initial registration into the program.

2. **Program Structure.** The program consists of five courses (15 credits). A full-time student can complete the program within one term.

3. **Course Load for Part-time Students.** Students who are not full-time as described above are classified as part-time students. They must complete the CIAM Program within two terms.

4. **Academic Standing.** The scholastic performance of all students will be reviewed on a regular basis at the end of each term. This assessment is based on the final grades of the courses completed during the term. The purpose of the review is to monitor the students' status and progress, to maintain the standards expected by the John Molson School of Business, and to assist students in achieving success in the program.

   To be considered in good standing at such a review, a student must have done the following:
   a. successfully completed the required course load, and
   b. achieved a grade point average (GPA) of 3.00 or better since the previous review or since admission in the case of the first review.

   Potential graduates who have not fulfilled the requirements for good standing must apply to the CIAM Program Committee to determine the requirements that they must meet in order to be reinstated as students in good standing and, thus, be considered for graduation.

5. **Conditional Standing.** Students with no failures on record but who still have not met the conditions for good standing will be placed on conditional standing.

   Students on conditional standing will be required to achieve a GPA of 3.00 or better in the courses taken during the probation period and achieve no individual grade lower than a B-. Additional requirements may be specified in individual cases.

   Students who do not meet the requirements of their conditional standing are considered failed students and are withdrawn from the program. They may apply in writing for reinstatement to the Program Committee.

6. **Failure Regulations.** Students who either fail one or more courses in the program or fail to meet the conditions of their conditional standing are withdrawn from the program. They may apply in writing for reinstatement to the Program Committee.

7. **Graduation Requirement.** In order to graduate, students must have a cumulative GPA of 3.00 and have completed all course requirements.

Requirements for the Certificate

The following five courses are required for the successful completion of the Certificate in Aviation Management. At the discretion of the program director, exceptionally, students may be permitted to substitute some courses with courses offered in a subsequent term.

AMBA 614 Human Resources Management (3 credits)
AMBA 635 Air Transportation Economics and Finance (3 credits)
AMBA 636 Information Technology (3 credits)
AMBA 638 Airport Management and Operations (3 credits)
AMBA 655 Airline Management and Marketing (3 credits)

Tuition Fees

The International Aviation Certificate Program is a privatized academic program. Cost of the program is $14,000 USD, which covers all student fees and course materials.

Payment Schedule for the Certificate Program

A $2,000 USD deposit must be paid on acceptance into the Certificate Program. The balance of $12,000 USD is payable two weeks prior to the commencement of the Program. All payments are non refundable.

Please note that tuition fees will be calculated on a twelve month average exchange rate.

John Molson School of Business

1550 de Maisonneuve Blvd. W., GM 903-07
Tel.: 848-2424 ext. 2796; Fax: 848-2816
Toll Free: 1-866-833-3232

Goodman Institute of Investment Management

Director: Alan Hochstein; *Assistant Director:* Lucy Wong

Programs

The increasing sophistication of the investment industry and the increasing reliance of individuals on investment professionals for long term financial security, requires an education in investment management over and above that demanded by the CFA® designation, from the Chartered Financial Analyst Institute (CFA Institute).

The Goodman Institute in Investment Management offers the following three programs, all preparing students for the CFA® designation:

DIM Diploma in Investment Management, 33 credits
MIM Master of/Magisteriate in Investment Management, 45 credits
IMBA Master of/Magisteriate in Business Administration (Investment Management Option), 57 credits

Objectives

1. To educate investment professionals, who will serve investors, to meet the highest standards of ethical and professional conduct, and possess the superior knowledge required from such disciplines as financial economics, financial accounting, quantitative methods, valuation and investment management.

2. To prepare students to successfully complete the Level I, II and III examinations leading to the Chartered Financial Analyst (CFA® designation).

Admission Requirements. The Admissions committee will evaluate the potential of each candidate for success within the program. A bachelor's degree, with high academic standing, or qualifications accepted as equivalent by the School of Graduate Studies and acceptance into the CFA program are necessary for admission. The applicants are evaluated according to the following criteria: undergraduate performance, Graduate Management Admission Test (GMAT) scores, work experience, detailed evaluations from employers and former university instructors, and statements of self-assessment. Students without formal undergraduate training in quantitative methods,

accounting, economics, and finance will be required to demonstrate adequate preparation.

Proficiency in English or French. Applicants whose first language is not English or French and who are not Canadian citizens or landed immigrants must obtain a satisfactory score (Computer Test: 250; Paper Test: 600 minimum) in the Test of English as a Foreign Language (TOEFL) or the International English Language Testing System (IELTS) before being considered for admission. This requirement will be waived for foreign students completing their undergraduate degrees at a university where English or French is the language of instruction.

Application Deadlines. The deadline for application to Concordia University is July 15 for the Fall term. CFA applications would need to be made by September. All students must meet all terms and conditions of the CFA in order to remain in the program. Applicants can apply online at: http://welcome.concordia.ca/.

Academic Regulations

1. **Attendance.** Students are expected to attend all classes.

2. **GPA Requirement**. The academic standing of each student will be reviewed by the committee at the end of each term. To be considered in good standing at this review, the student must, in the preceding term, have:
   - Successfully completed the required course load with a grade point average of 3.00 or better.
   - Passed the appropriate CFA® exam (only MIM and IMBA students).

3. **Academic Standing.** Students who have not fulfilled these conditions will, at the discretion of the program committee, be considered either a student on probationary standing or a failed student. Students who have failed a course, or the appropriate CFA® exam, will normally be considered a failed student. Students on probationary standing will have specific requirements set as a condition of being returned to good standing. If these requirements are not met, the student will be considered a failed student. Failed students will be withdrawn from the program and can apply for reinstatement.

4. **Graduation Requirement.** In order to graduate, students must have a cumulative GPA of 3.00. In addition, MIM and IMBA students must successfully complete Levels I and II of the CFA® exams. However, DIM students are not required to complete Levels I and II of the CFA® exams.

Diploma in Investment Management

This two-year program of full-time study is designed for the investment professional who wishes to obtain a graduate diploma in investment management.

Requirements for the Diploma and Program Procedures

1. **Credits.** To earn the Graduate Diploma in Investment Management degree from Concordia University, the student must successfully complete 33 credits.

2. **Course Load.** Normally students must register for a total of 33 credits over 2 years, and must achieve success in these courses in order to remain a student in good standing in the program. Students are expected to complete the Diploma in no more than four years from the year of initial registration in the program.

Transfer Credits

Students who have had their Diploma in Investment Management conferred will not receive transfer credits for the MIM or IMBA Programs.

Tuition Fees

Tuition fees for the Graduate Diploma in Investment Management Program are not covered by the regular fee structure. The cost (subject to annual review) for the Program is $16,000 per year (for two years) and is due by September 10 of each year. Upon acceptance to the Program, the student is required to pay a non-refundable deposit of $1,500. The balance of the first year tuition ($14,500) is payable by September 10 of the first year.

In case of official withdrawal from the IMBA or MIM Program within the Goodman Institute of Investment Management, all tuition fees paid in the IMBA or MIM Program are transferable to the DIM Program.

Tuition fees do not include CFA fees, or any other professional memberships; students are expected to cover these costs themselves.

Required Courses for the Diploma in Investment Management (33 credits)

GIIM 610 Economics
GIIM 611 Financial Statement Analysis I
GIIM 613 Asset Pricing and Portfolio Management I
GIIM 614 Security Valuation in the Domestic and International Environment
GIIM 616 Quantitative Techniques

GIIM 617 Corporate Finance
GIIM 618 Seminar in Corporate Finance
GIIM 620 Financial Statement Analysis II
GIIM 621 Fixed Income Analysis
GIIM 622 Derivatives
GIIM 623 Asset Pricing and Portfolio Management II
GIIM 624 Analysis of Equity Investments
GIIM 633 Investment Law and Ethics

Master of/Magisteriate in Investment Management

This program is designed for the investment professional who wishes to build upon the graduate Diploma in Investment Management to obtain a master's degree specializing in investment management while studying to complete three levels of CFA® exams. Success on Level I and II of the CFA® exams is an integral part of the requirements for the degree.

Requirements for the Degree and Program Procedures

1. **Credits.** To earn the Master in Investment Management from Concordia University, the student must successfully complete 45 credits in addition to any required qualifying courses and pass Levels I and II of the CFA® exams. These 45 credits include 30 credits from the Graduate Diploma in Investment Management Program, or equivalent, and an additional 15 credits of specialization courses taken within the Master in Investment Management. No degree will be granted unless all these conditions are met.

2. **Course Load.** Students must register for at least 9 credits per year for all three years and achieve success in these courses and the CFA preparation course and exam at the end of the third year, in order to remain a student in good standing in the program. Students are expected to complete the degree in no more than five years from the year of initial registration in the program.

Tuition Fees

Tuition fees for the Master in Investment Management are not covered by the regular fee structure. The cost (subject to annual review) for the Program is $16,000 per year (for three years) and is due by September 10 of each year. Upon acceptance to the Program, the student is required to pay a non-refundable deposit of $1,500. The balance of the first year tuition ($14,500) is payable by September 10 of the first year.

Tuition fees do not include CFA fees, or any other professional memberships; students are expected to cover these costs themselves. If the student is not

accepted into the CFA program, the student will be withdrawn and will be entitled to a rebate of $7,250.

Required Courses for the Master of/Magisteriate in Investment Management
(45 credits)

GIIM 610 Economics
GIIM 611 Financial Statement Analysis I
GIIM 613 Asset Pricing and Portfolio Management I
GIIM 614 Security Valuation in the Domestic and International Environment
GIIM 615 CFA® Exam Preparation Course Level I
GIIM 616 Quantitative Techniques
GIIM 617 Corporate Finance
GIIM 618 Seminar in Corporate Finance
GIIM 620 Financial Statement Analysis II
GIIM 621 Fixed Income Analysis
GIIM 622 Derivatives
GIIM 623 Asset Pricing and Portfolio Management II
GIIM 624 Analysis of Equity Investments
GIIM 625 CFA® Exam Preparation Course Level II
GIIM 631 Asset Allocation and Performance Measurement
GIIM 634 CFA® Exam Preparation Course Level III
GIIM 636 Alternative Investments
GIIM 650 Mutual Fund Administration
GIIM 653 Seminar in Investment Analysis and Management
GIIM 654 Seminar in International Investment Analysis and Management

Master of/Magisteriate in Business Administration (Investment Management Option)

This program is designed for the investment professional who wishes to build upon the graduate Diploma in Investment Management to obtain an MBA degree specializing in investment management while studying to complete the three levels of CFA® exams. Success on Level I and II of the CFA® exams is an integral part of the requirements for the degree.

Requirements for the Degree and Program Procedures

Credits. To earn the Master of Business Administration (Investment Management) degree from Concordia University, the student must successfully complete 57 credits in addition to any required qualifying courses and must pass Level I and II of the CFA® exams. These 57 credits include the 30 credits from the Graduate Diploma in Investment Management Program, or equivalent, and an additional 18 credits of specialization courses and the 9 non-finance MBA elective credits. No degree will be granted unless all these conditions are met.

Course Load. Students must register for at least 9 credits per year for all three years and must achieve success on the CFA preparation course and exam at the end of the third year of registration, in order to remain a student in good standing in the program. Students are expected to complete the degree in no more than 5 years from the year of initial registration in the program.

Tuition Fees

Tuition fees for the Master of Business Administration (Investment Management Option) are not covered by the regular fee structure. The cost (subject to annual review) for the Program is $16,000 per year (for three years) and is due by September 10 of each year. Upon acceptance to the Program, the student is required to pay a non-refundable deposit of $1,500. The balance of the first year tuition ($14,500) is payable by September 10 of the first year.
Tuition fees do not include CFA® fees, or any other professional memberships; students are expected to cover these costs themselves. If the student is not accepted into the CFA® program, the student will be withdrawn and will be entitled to a rebate of $7,250.

Required Courses for the Master of/Magisteriate in Business Administration (Investment Management Option) (57 credits)

Required GIIM Courses (48 credits)

GIIM 610 Economics
GIIM 611 Financial Statement Analysis I
GIIM 613 Asset Pricing and Portfolio Management I
GIIM 614 Security Valuation in the Domestic and International Environment
GIIM 615 CFA® Exam Preparation Course Level I
GIIM 616 Quantitative Techniques
GIIM 617 Corporate Finance
GIIM 618 Seminar in Corporate Finance
GIIM 620 Financial Statement Analysis II
GIIM 621 Fixed Income Analysis
GIIM 622 Derivatives
GIIM 623 Asset Pricing and Portfolio Management II
GIIM 624 Analysis of Equity Investments
GIIM 625 CFA® Exam Preparation Course Level II
GIIM 631 Asset Allocation and Performance Measurement
GIIM 633 Investment Law and Ethics
GIIM 634 CFA® Exam Preparation Course Level III
GIIM 636 Alternative Investments
GIIM 650 Mutual Fund Administration
GIIM 653 Seminar in Investment Analysis and Management
GIIM 654 Seminar in International Investment Analysis and Management
GIIM 695 Special Topics in Investment Management

Required Elective Courses (9 credits)

3 non-Finance MBA Electives

Course Descriptions

GIIM 610 Economics (3 credits)
This course will examine the theoretical basis and investment implications of macroeconomic and microeconomic principles, including the key components of economic activity, industrial organization, macro theory and policy, international trade, and exchange rates.
Note: Students who have taken DIM 610, MIM 610, or IMBA 610 may not take this course for credit.

GIIM 611 Financial Statement Analysis I (3 credits)
This course will examine the fundamental financial statements and the impact of different accounting principles on those statements. The course will examine the treatment of such items as income taxes, inventories, depreciation, and leases from the perspective of the investment analyst. International differences in accounting standards will also be examined.
Note: Students who have taken DIM 611, MIM 611, or IMBA 611 may not take this course for credit.

GIIM 613 Asset Pricing and Portfolio Management I (1.5 credits)
This course will examine the efficient markets hypothesis and introduce the classic asset pricing models (domestic and international). The key elements of the theory and practice of the portfolio management process, including investment policy, asset allocation, and client relations will be examined in the domestic and international context.
Note: Students who have taken DIM 613, MIM 613, or IMBA 613 may not take this course for credit.

GIIM 614 Security Valuation in the Domestic and International Environment (3 credits)
This course will examine security (equity and fixed income) risk and valuation (for companies and industries) using alternative methodologies. The characteristics of global financial markets and the implications for security valuation will be examined. The theory and analysis of derivative securities will be introduced.
Note: Students who have taken DIM 614, MIM 614, or IMBA 614 may not take this course for credit.

GIIM 615 CFA® Exam Preparation Course Level I (1 credit)
This course will review the material needed for the Level I CFA® exam. Successful completion of this course includes passing the CFA® Level I Exam.
Note: Students who have taken DIM 615, MIM 615, or IMBA 615 may not take this course for credit.

GIIM 616 Quantitative Techniques (3 credits)
This course will examine the nature of the models used in the valuation and evaluation of investments, the theoretical and practical use of these models, comparison of classical or traditional models based on statistical analysis versus those based on more recent developments.
Note: Students who have taken DIM 612, MIM 612, IMBA 612, DIM 616, MIM 616, or IMBA 616 may not take this course for credit.

GIIM 617 Corporate Finance (1.5 credits)
This module covers the theory and practice of corporate finance with emphasis on concepts such as cash flow, liquidity, leverage, cost of capital, project evaluation, and dividend policy.
Note: Students who have taken DIM 612, MIM 612, IMBA 612, DIM 617, MIM 617, or IMBA 617 may not take this course for credit.

GIIM 618 Seminar in Corporate Finance (3 credits)
This course focuses on the application of modern finance theory to corporate decisions. It examines the firm's investment and financial decisions under various economic and financial conditions. Specific topics include mergers and acquisitions, leverage buyout decisions and dividend and equity management strategies. *Prerequisite:* For MIM and IMBA Students: GIIM 615 or DIM 615 or MIM 615 or IMBA 615.
Note: Students who have taken MIM 618 or IMBA 618 may not take this course for credit.

GIIM 620 Financial Statement Analysis II (3 credits)
This course will examine the analysis and use of financial statements and disclosures in the investment valuation process. The impact of international differences and managerial choice on the financial statements will be examined. *Prerequisite*: For MIM and IMBA students: GIIM 615 or DIM 615 or MIM 615 or IMBA 615.
Note: Students who have taken DIM 620, MIM 620, or IMBA 620 may not take this course for credit.

GIIM 621 Fixed Income Analysis (1.5 credits)
This course will examine the risk and return characteristics of debt instruments, term structure of interest rates, valuation of securities with embedded derivative securities or other unique features. The unique features of real estate and private equity investments will be examined. *Prerequisite*: For MIM and IMBA students: GIIM 615 or DIM 615 or MIM 615 or IMBA 615.
Note: Students who have taken DIM 621, MIM 621, or IMBA 621 may not take this course for credit.

GIIM 622 Derivatives (3 credits)
This course will examine the theory and practice of futures, swaps and option valuation. *Prerequisite:* For MIM and IMBA students: GIIM 615 or DIM 615 or MIM 615 or IMBA 615.

Note: Students who have taken DIM 622, MIM 622, or IMBA 622 may not take this course for credit.

GIIM 623 Asset Pricing and Portfolio Management II (1.5 credits)
This course will examine the theory and critically evaluate the empirical evidence regarding asset pricing models. Implications for the correlation structure of returns and the impact on risk and return forecasting will be examined. This course will examine the role of alternative portfolio management philosophies and their implications for asset valuations and portfolio performance evaluation. The use and role of quantitative methods in the evaluation and forecasting of investment performance will be examined. The implications of asset pricing model predictions and failures for portfolio management will be examined. *Prerequisite*: For MIM and IMBA students: GIIM 615 or DIM 615 or MIM 615 or IMBA 615.
Note: Students who have taken DIM 623, MIM 623, or IMBA 623 may not take this course for credit.

GIIM 624 Analysis of Equity Investments (3 credits)
This course will examine the use of fundamental analysis and other methodologies to generate investment valuations and risk analyses. The impact of special situations on the valuation process and the valuation of equity derivative securities will be examined. *Prerequisite*: For MIM and IMBA students: GIIM 615 or DIM 615 or MIM 615 or IMBA 615.
Note: Students who have taken DIM 624, MIM 624, or IMBA 624 may not take this course for credit.

GIIM 625 CFA® Exam Preparation Course Level II (1 credit)
This course will review the material needed for the Level II CFA® exam. Successful completion of this course includes passing the CFA® Level II exam. *Prerequisite*: GIIM 615, DIM 615, MIM 615 or IMBA 615.
Note: Students who have taken DIM 625, MIM 625, or IMBA 625 may not take this course for credit.

GIIM 631 Asset Allocation and Performance Measurement (3 credits)
This course will examine the estimation of expected returns and risks for asset classes and individual assets, the development of strategies for managing portfolios of domestic and foreign securities (equity, fixed income, real estate, etc.), the management of portfolio risk, and the evaluation of portfolio and manager performance. *Prerequisite*: GIIM 625, DIM 625, MIM 625, or IMBA 625.
Note: Students who have taken DIM 631, MIM 631, IMBA 631, DIM 632, MIM 632, or IMBA 632 may not take this course for credit.

GIIM 633 Investment Law and Ethics (3 credits)
This course will examine issues regarding the management of investment funds including techniques for the identification and prevention of professional misconduct, and the nature and drafting of compliance procedures. The practice of portfolio management and investment valuation will be studied through the

use of topical cases. *Prerequisite:* For MIM and IMBA students: GIIM 625 or DIM 625 or MIM 625 or IMBA 625.
Note: Students who have taken DIM 633, MIM 633, or IMBA 633 may not take this course for credit.

GIIM 634 CFA® Exam Preparation Course Level III (1 credit)
This course will review the material needed for the Level III CFA® exam. *Prerequisite:* GIIM 625, DIM 625, MIM 625, or IMBA 625.
Note: Students who have taken DIM 634, MIM 634, or IMBA 634 may not take this course for credit.

GIIM 636 Alternative Investments (1.5 credits)
This course will cover a description of investments such as hedge funds, real estate and the private equity market. *Prerequisite:* GIIM 625, DIM 625, MIM 625, or IMBA 625.
Note: Students who have taken DIM 621, MIM 621, IMBA 621, MIM 636, or IMBA 636 may not take this course for credit.

GIIM 650 Mutual Fund Administration (1.5 credits)
This course will examine the nature of the mutual fund business, the regulatory environment, the marketing of the product, cost control, and other challenges arising from the management of the business. *Prerequisite:* GIIM 625, DIM 625, MIM 625, or IMBA 625.
Note: Students who have taken MIM 650 or IMBA 650 may not take this course for credit.

GIIM 653 Seminar in Investment Analysis and Management (3 credits)
This course will concentrate heavily on portfolio risk management issues. Topics such as the effect of cash drag, the use of equity and debt derivatives to manage risk and the uses and abuses of value at risk (VAR) will be explored. Other topics include equity style and its importance index funds and relevant criteria for the selection of investment managers. *Prerequisite:* GIIM 625, DIM 625, MIM 625, or IMBA 625.
Note: Students who have taken MIM 653 or IMBA 653 may not take this course for credit.

GIIM 654 Seminar in International Investment Analysis and Management (3 credits)
This course begins with a discussion of exchange rates and to what extent economic factors and market sentiment are important in the determination of these rates. Issues of importance that international investors face will be examined along with the benefits of international diversification. The course will conclude with the analysis of issues relevant to emerging markets and factors that would influence the construction of a portfolio that may include an emerging market component. *Prerequisite:* GIIM 625, DIM 625, MIM 625, or IMBA 625.

Note: Students who have taken MIM 654 or IMBA 654 may not take this course for credit.

GIIM 695 Special Topics in Investment Management (3 credits)

Electives

3 Non-Finance MBA Electives (9 credits)
Three (3-credit) courses are required to complete the program. These courses must be selected in consultation with the GIIM Program Director and will be outside the Department of Finance.

1550 de Maisonneuve W., GM 710-23
Tel.: 848-2424 ext. 2718; Fax: 848-2816
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Diploma in Administration (DIA)

Director: Dr. Clarence S. Bayne; *Assistant Director, Marketing and Student Affairs*: Lissa Matyas; *Assistant Director, Admissions and Administration*: Chen Feng Huang

Diploma in Administration (DIA): *Career Options - Community Services, Public and Para-Public; Health and Health Care Delivery; Arts, Cultural Affairs and Event Management.*

Program Objectives

The Graduate Diploma in Administration (DIA) in the John Molson School of Business offers students a choice of career options in administration of Community Services, Public and Para-Public Organizations; Health and Health Care Delivery Organizations; and Arts, Cultural Affairs and Event Management. Accredited by the prestigious AACSB—The International Association for Management Education—the DIA program is implementing the School's mission of educating and graduating employable students.

The specific program objectives are:
1. to provide candidates with a common core of knowledge and a sound grounding in the basic body of administrative and managerial theory and practice needed to become administrators, managers or leaders in community services, public and para-public organizations; health and health care delivery organizations; and arts, cultural affairs and event management.
2. to enhance the practicing administrator's knowledge in the application of the administrative sciences and technologies in various career options.
3. to encourage the pursuit of excellence and high-quality research of both a theoretical and applied nature in not-for-profit management and related studies.
4. to graduate students who have the numeric skills, competency in communication technologies, critical and analytical capabilities, and a degree of practical experience that would make them effective and efficient leaders and managers in not-for-profit organizations.

Internship or Research Project

The *Internship* is a course in which students are placed in a working environment where they can apply the concepts acquired in classroom courses. Through this process, students are expected to perfect their skills as managers and/or administrators. The internship is normally done at the end of the program. Permission of the Program Director is required before the student

begins the internship. A final written report is mandatory. The student's report is supervised by a faculty member who is chosen in consultation with the Internship Coordinator.

The *Research Project* is an in-depth analysis of a problem with respect to a student's career option. The project is intended to help students to develop skills in critical thinking and to teach them techniques for conducting basic research. It is normally done after students have taken all the core courses and career option courses. A final written report is mandatory. The student's work is supervised by a faculty member who is chosen in consultation with the Assistant Director.

Admission Requirements. Applicants must possess a bachelor's degree with high academic standing from a recognized university. Applicants are evaluated according to the following:

1. Academic standing in their undergraduate and/or graduate studies.
2. Performance on either the Graduate Management Admission Test (GMAT) or Graduate Record Examination (GRE). However, students with a master's or doctoral degree may be exempted from doing such tests at the discretion of the Admissions Committee.
3. Professional and/or other relevant experience.
4. Detailed letters of recommendation.
5. Statement of purpose.

Advanced Standing for the MBA Program. Students in good academic standing who have completed all the requirements for the DIA Program, including the Internship or the Research Project, may be granted advanced standing for 24 transfer credits upon admission to the MBA Program. Students who have completed all the program requirements must withdraw from the DIA before they can obtain transfer credits. Students who do not meet these requirements will not be granted transfer credits for courses taken in the DIA program.
Note: Students who have had their DIA Diploma conferred will not receive transfer credits from the MBA Program. Course exemptions may be granted, but the exempted courses must be replaced by alternate courses.

Competence in Mathematics, Statistics and Computer Skills. Students are required to have these skills before they enter the DIA program **or** to complete appropriate courses in their first term. They must take these courses in addition to their regular program requirements. Students who intend to complete the program in one calendar year are strongly advised to satisfy these skills requirements or take appropriate courses before beginning the DIA program.

Students who do not have sufficient mathematics and/or statistics skills will be required to complete COMM 610 or an equivalent. In some cases where students do not have the basic knowledge of mathematics, they will be required to take an additional basic math course at the undergraduate level before

taking COMM 610. Students who lack the necessary computer skills will be required to complete INTE 290 or an equivalent.

Proficiency in English or French. Applicants whose first language is neither English nor French and who are not Canadian citizens or landed immigrants must achieve a satisfactory performance in the Test of English as a Foreign Language (TOEFL) before being considered for admission. This requirement may be waived for international students completing their undergraduate degrees at a university where English or French is the language of instruction.

Applications. A detailed description of the program can be obtained from the Graduate Diploma in Administration, Program Director, John Molson School of Business, Concordia University, Room GM 710-23, 1455 de Maisonneuve Blvd. West, Montreal, Quebec H3G 1M8. Applicants can apply online at: http://welcome.concordia.ca/.

Application Deadlines. The deadlines for applications are June 15 for the Fall term; October 15 for the Winter term; and February 15 for the Summer term.

Requirements for the Diploma

1. **Program Structure.** The program consists of 10 courses (30 credits), 6 of which are core courses (18 credits), and the remaining 4 courses (12 credits) including the Internship/Research Project are taken in the student's chosen career option. Students must register for courses according to the sequence specified by the program.

2. **Time Limit.** It is expected that full-time students complete the program within 6 terms (2 years), and part-time students complete it within 12 terms (4 years), from initial registration into the program. A student enrolled on a full-time basis could complete the program in one calendar year, provided that he/she does not have to complete any qualifying courses.

3. **Course Load for Full-time Students.** Students must register for 8 or more credits per term.

4. **Course Load for Part-time Students.** Students who are not full-time as described above are classified as part-time students. They must complete the DIA program within 4 years.

5. **Academic Standing.** The scholastic performance of all students will be reviewed on a regular basis at the end of each term. This assessment is based on the final grades in courses completed during the term. The purpose of the review is to monitor students' status and progress, to maintain the standards expected by the John Molson School of Business, and to assist students in achieving success in the program.

To be considered in good standing, a student must have:

a. successfully completed the required course load specified in paragraphs 3 or 4 above, and
b. achieved a grade point average (GPA) of 3.00 or better since the previous review or since admission in the case of the first review.

A student who has not fulfilled the requirements for good standing is considered either a failed student or a student on conditional standing.

Potential graduates who have not fulfilled the requirements for good standing must apply to the DIA/DSA Program Committee to determine the requirements that they must meet in order to be reinstated as students in good standing, and thus be considered for graduation.

6. **Conditional Standing.** Students with no failures on record who have not met the conditions for good standing will be placed on conditional standing (probation). Students on conditional standing will be required to achieve a GPA of 3.00 or better in the courses taken during the probation period. Additional requirements may be specified in individual cases. Students who do not meet the requirements of their conditional standing are considered failed students and are withdrawn from the program. They may apply in writing for reinstatement to the Program Committee.

7. **Failure Regulations.** Students who either fail one or more courses in the program or fail to meet the conditions of their conditional standing are withdrawn from the program. They may apply in writing for reinstatement to the Program Committee.

8. **Graduation Requirement.** In order to graduate, students must have a minimum cumulative GPA of 3.00.

Program Structure

Qualifying Courses

Normally, students who require qualifying courses will complete them prior to beginning their program of study.

COMM 610 Basic Quantitative Skills for Administration (3 credits)
Refer to page 581 for course description.
Note: Students who have taken COMM 500 or COMM 600 may not receive credit for this course.

Required Core Courses

The following 6 courses must be taken by all the students in the DIA Program.

ACCO 610 Accounting for Not-for-Profit Organizations (3 credits)
The objective of this course is to acquaint students considering an administrative career in not-for-profit, sport or public sector organizations with the fundamentals of accounting and financial management as they are used for reporting, planning, control, financing and evaluation in those organizations.
Note: Students who have taken ACCO 510 may not receive credit for this course.

DESC 611 Management Information Systems with Applications in Not-for-Profit and Sport Organizations (3 credits)
Prerequisite: INTE 290 or equivalent.
This course is designed for students of management and administration practices in not-for-profit, arts, health care, sport, para-public and public organizations. Its focus is the impact of information systems on the effectiveness of managers and end users. Its objective is to build a basic understanding of the value and uses of information systems and telecommunications for daily operations and management decision making in cultural, public, sport, para-public and health care sector organizations. Though not designed as a course in computer literacy, it does include topics that give a "managerial overview" of information technology.
Note: Students who have taken DESC 511 may not receive credit for this course.

DESC 613 Quantitative Research Methods in Organizations (3 credits)
Prerequisite: COMM 610 or equivalent.
This course introduces the fundamentals of quantitative research methods as applied in the various areas of administration. Topics covered include statistics and scientific methodology, sample survey techniques (questionnaire design, survey methods, sample design and analysis), contingency table analysis, regression and correlations analysis, and analysis of variance and experimental design (completely randomized design and randomized blocks design).
Note: Students who have taken DESC 513 may not receive credit for this course.

DESC 615 Managerial Economics with Applications in Not-for-Profit and Sport Organizations (3 credits)
Prerequisite: COMM 610 or equivalent.
This course introduces students to an analytical and quantitative approach to the study of economic problems confronting organizations in the not-for-profit, arts, health care, sport, public and para-public sectors. It presents a thorough and rigorous analysis of the theory of consumer behaviour and the theory of behaviour of the organization under conditions of certainty and uncertainty. The theory and practical importance of managerial analysis in the determination of optimal output and pricing are examined. An extensive analysis of market structures and a rationale for the existence of various organizations will be presented. Emphasis will be placed on the use of selected quantitative techniques and models for the analysis and understanding of

problems specific to not-for-profit and sport organizations, and the functional differences between these organizations and the traditional market firm.
Note: Students who have taken DESC 515 may not receive credit for this course.

MANA 600 Organizational Behaviour and Administrative Theory for Not-for-Profit and Sport Organizations (3 credits)
This course will review the important developments in administrative and behavioural thinking and will focus on the work of management scholars who have made significant contributions to the practice of management. The course will span the various levels of organizational analysis (individual, group, organization and environment) and review a variety of perspectives on organizational behaviour, organizational theory and administrative thought. Students are expected to understand and be able to critically assess the impact of concepts, theories, and scholarly contributions of material covered. The course will address the issues of management related to organizations in the not-for-profit, cultural, sport, public and para-public sectors.
Note: Students who have taken MANA 500 may not receive credit for this course.

MARK 610 Marketing for Not-for-Profit Organizations (3 credits)
This course is an introduction to the principles of marketing in an administrative setting. The course views the subject matter from both societal and managerial standpoints. It includes discussion of the role and importance of marketing in society, some ethical considerations as well as the tools and methods available for operational efficiency.
Note: Students who have taken MARK 510 may not receive credit for this course.

Career Option Courses

Students take all 3 courses in their chosen career option. However, while the 6 core courses are mandatory, the Program Committee may recommend particular clusters of career option courses to meet the specific needs of students.

Career Option A: Administration of Community Services, Public and Para-Public Organizations

GDIA 621 Not-for-Profit Managerial and Administrative Theory and Practice (3 credits)
Note: Students who have taken GDIA 521 may not receive credit for this course.

GDIA 622 Law for Charitable, Not-for-Profit, Sport and Entertainment Organizations (3 credits)
Note: Students who have taken GDIA 522 may not receive credit for this course.

GDIA 691 **Internship** (3 credits)
Note: Students who have taken GDIA 591 may not receive credit for this course.
OR
GDIA 692 **Research Project** (3 credits)
Note: Students who have taken GDIA 592 may not receive credit for this course.

Career Option B: Administration of Heath and Health Care Delivery Organizations

GDIA 631 **Management and Policy in Health Care Delivery** (3 credits)
Note: Students who have taken GDIA 531 may not receive credit for this course.
GDIA 632 **Health Care Economics and Finance** (3 credits)
Prerequisites: COMM 610 or equivalent, ACCO 610 and DESC 615.
Note: Students who have taken GDIA 532 may not receive credit for this course.
GDIA 691 **Internship** (3 credits)
Note: Students who have taken GDIA 591 may not receive credit for this course.
OR
GDIA 692 **Research Project** (3 credits)
Note: Students who have taken GDIA 592 may not receive credit for this course.

Career Option C: Administration of the Arts and Cultural Affairs and Event Management

GDIA 641 **Marketing the Arts, Culture and Tourism** (3 credits)
Prerequisite: MARK 610, previously or concurrently.
Note: Students who have taken GDIA 541 may not receive credit for this course.
GDIA 642 **Public Relations and Fundraising for Not-for-Profit Organizations** (3 credits)
Note: Students who have taken GDIA 542 may not receive credit for this course.
GDIA 691 **Internship** (3 credits)
Note: Students who have taken GDIA 591 may not receive credit for this course.
OR
GDIA 692 **Research Project** (3 credits)
Note: Students who have taken GDIA 592 may not receive credit for this course.

Elective Courses

*Students choose **one** of the following electives, which are offered annually or as justifiable.*

Career Option A: Administration of Community Services, Public and Para-Public Organizations

* **GDIA 642** **Public Relations and Fundraising for Not-for-Profit Organizations** (3 credits)
Note: Students who have taken GDIA 542 may not receive credit for this course.

GDIA 661 **Management Control in Not-for-Profit Organizations** (3 credits)
Prerequisite: ACCO 610 or equivalent.
Note: Students who have taken GDIA 561 may not receive credit for this course.

* **GDIA 662** **Project and Event Management** (3 credits)
Prerequisite: DESC 611 or equivalent.
Note: Students who have taken GDIA 562 may not receive credit for this course.

GDIA 666 **Managing Resources in Public and Community Organizations** (3 credits)
Prerequisite: MANA 600, previously or concurrently.
Note: Students who have taken GDIA 566 may not receive credit for this course.

Career Option B: Administration of Heath and Health Care Delivery Organizations

* **GDIA 622** **Law for Charitable, Not-for-Profit, Sport and Entertainment Organizations** (3 credits)
Note: Students who have taken GDIA 522 may not receive credit for this course.

* **GDIA 642** **Public Relations and Fundraising for Not-for-Profit Organization** (3 credits)
Note: Students who have taken GDIA 542 may not receive credit for this course.

* **GDIA 662** **Project and Event Management** (3 credits)
Prerequisite: DESC 611 or equivalent.
Note: Students who have taken GDIA 562 may not receive credit for this course.

* **GDIA 663** **Total Quality Management in Sport and Not-for-Profit Organizations** (3 credits)
Prerequisite: COMM 610 or equivalent.
Note: Students who have taken GDIA 563 may not receive credit for this course.

GDIA 667 **Human Resources Management in Not-for-Profit and Health Care Organizations** (3 credits)
Prerequisite: MANA 600, previously or concurrently.
Note: Students who have taken GDIA 567 may not receive credit for this course.

Career Option C: Administration of the Arts and Cultural Affairs and Event Management

* **GDIA 622** **Law for Charitable, Not-for-Profit, Sport and Entertainment Organizations** (3 credits)
Note: Students who have taken GDIA 522 may not receive credit for this course.

* **GDIA 652** **Management and Operations of Sport, Arts and Cultural Facilities** (3 credits)
Note: Students who have taken GDIA 552 may not receive credit for this course.

* **GDIA 662** **Project and Event Management** (3 credits)
Prerequisite: DESC 611 or equivalent.
Note: Students who have taken GDIA 562 may not receive credit for this course.

Other Elective Courses

* **GDIA 622** **Law for Charitable, Not-for-Profit, Sport and Entertainment Organizations** (3 credits)
Note: Students who have taken GDIA 522 may not receive credit for this course.

GDIA 632 **Health Care Economics and Finance** (3 credits)
Prerequisites: COMM 610 or equivalent, ACCO 610 and DESC 615.
Note: Students who have taken GDIA 532 may not receive credit for this course.

* **GDIA 642** **Public Relations and Fundraising for Not-for-Profit Organizations** (3 credits)
Note: Students who have taken GDIA 542 may not receive credit for this course.

* **GDIA 651** **Sport and Cultural Event Management** (3 credits)
Prerequisite: MANA 600, previously or concurrently; MARK 610, previously or concurrently.
Note: Students who have taken GDIA 551 may not receive credit for this course.

* **GDIA 652** **Management and Operations of Sport, Arts and Cultural Facilities** (3 credits)
Note: Students who have taken GDIA 552 may not receive credit for this course.

GDIA 661 **Management Control in Not-for-Profit Organizations** (3 credits)
Prerequisite: ACCO 610 or equivalent.
Note: Students who have taken GIDA 561 may not receive credit for this course.

* **GDIA 662** **Project and Event Management** (3 credits)
Prerequisite: DESC 611 or equivalent.
Note: Students who have taken GDIA 562 may not receive credit for this course.

* **GDIA 663** **Total Quality Management in Sport and Not-for-Profit Organizations** (3 credits)
Prerequisite: COMM 610 or equivalent.
Note: Students who have taken GDIA 563 may not receive credit for this course.

GDIA 665 **Management of Human Resources** (3 credits)
Prerequisite: MANA 600.
Note: Students who have taken GDIA 565 may not receive credit for this course.

GDIA 666 **Managing Resources in Public and Community Organizations** (3 credits)
Prerequisite: MANA 600, previously or concurrently.
Note: Students who have taken GDIA 566 may not receive credit for this course.

GDIA 667 **Human Resources Management in Not-for-Profit and Health Care Organizations** (3 credits)
Prerequisite: MANA 600, previously or concurrently.
Note: Students who have taken GDIA 567 may not receive credit for this course.

GDIA 681 **Special Topics in Accountancy** (3 credits)

GDIA 682 **Special Topics in Decision Science and M.I.S.** (3 credits)

GDIA 683 **Special Topics in Finance** (3 credits)

GDIA 684 **Special Topics in Management** (3 credits)

GDIA 685 **Special Topics in Marketing** (3 credits)

** **ETEC 591** **Administration of Educational Technology Units for Educational and Training Systems** (3 credits)

Note: Students who have taken MANA 520 may not receive credit for GDIA 622.
Students who have taken MANA 541 or EXCI 543 may not receive credit for GDIA 652.
Students who have taken EXCI 541 may not receive credit for GDIA 651.

* These courses are cross-listed with courses from the DSA Program.
** With permission from the Program Director for the Diploma in Instructional Technology.

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Tel.: 848-2424 ext. 2718; Fax: 848-2816
website: http://www.johnmolson.concordia.ca/diadsa

Diploma in Sport Administration (DSA)

Director: Dr. Clarence S. Bayne; *Assistant Director, Marketing and Student Affairs*: Lissa Matyas; *Assistant Director, Admissions and Administration*: Chen Feng Huang

The John Molson School of Business offers a Graduate Diploma in Sport Administration (DSA) for qualified applicants wanting to pursue managerial and administrative careers in or related to organizations in the sport sector.

Program Objectives

Accredited by the prestigious AACSB—the International Association for Management Education—the DSA program is implementing the School's mission of educating and graduating employable students.

The specific program objectives are:
1. to provide candidates with a common core of knowledge and a sound grounding in the basic body of administrative and managerial theory and practice needed to become administrators, managers or leaders in sport or fitness organizations.
2. to enhance the practicing administrator's knowledge in the application of the administrative sciences and technologies in the fitness and sport sector.
3. to encourage the pursuit of excellence and high-quality research of both a theoretical and applied nature in sport management and related studies.
4. to graduate students who have the numeric skills, competency in communication technologies, critical and analytical capabilities, and a degree of practical experience that would make them effective and efficient leaders and managers in the fitness and sport sector.

Internship or Research Project

An important component of the DSA program is the *internship*. The internship is designed as a well-structured work experience with leading organizations in the sport field. Through this process students are expected to perfect their skills as managers and/or administrators. The internship is normally done at the end of the program. Permission of the Program Director is required before the student begins the internship. A final written report is mandatory. The student's report is supervised by a faculty member who is chosen in consultation with the Internship Coordinator.

The *Research Project* is an in-depth analysis of a problem in the sport or fitness sector. The project is intended to help students to develop skills in critical thinking and to teach them techniques for conducting basic research. It is normally done at the end of the program. A final written report is mandatory. The student's work is supervised by a faculty member who is chosen in consultation with the Assistant Director.

Admission Requirements. Applicants must possess a bachelor's degree with high academic standing from a recognized university. Applicants are evaluated according to the following:

1. Academic standing in their undergraduate and/or graduate studies.
2. Performance on either the Graduate Management Admission Test (GMAT) or Graduate Record Examination (GRE). However, students with a master's or doctoral degree may be exempted from doing such tests at the discretion of the Admissions Committee.
3. Professional and/or other relevant experience.
4. Detailed letters of recommendation.
5. Statement of purpose.

Advanced Standing for the MBA Program. Students in good academic standing who have completed all the requirements for the DSA Program, including the Internship or the Research Project, may be granted advanced standing for 24 transfer credits upon admission to the MBA Program. Students who have completed all the program requirements must withdraw from the DSA before they can obtain transfer credits. Students who do not meet these requirements will not be granted transfer credits for courses taken in the DSA program.
Note: Students who have had their DSA Diploma conferred will not receive transfer credits from the MBA program. Course exemptions may be granted, but the exempted courses must be replaced by alternate courses.

Competence in Mathematics, Statistics and Computer Skills. Students are required to have these skills before they enter the DSA program **or** to complete appropriate courses in their first term. They must take these courses in addition to their regular program requirements. Students who intend to complete the program in one calendar year are strongly advised to satisfy these skills requirements or take appropriate courses before beginning the DSA program.

Students who do not have sufficient mathematics and/or statistics skills will be required to complete COMM 610 or an equivalent. In some cases where students do not have the basic knowledge of mathematics, they will be required to take an additional basic math course at the undergraduate level before taking COMM 610. Students who lack the necessary computer skills will be required to complete INTE 290 or an equivalent.

Proficiency in English or French. Applicants whose first language is neither English nor French and who are not Canadian citizens or landed immigrants

must achieve a satisfactory performance in the Test of English as a Foreign Language (TOEFL) before being considered for admission. This requirement may be waived for foreign students completing their undergraduate degrees at a university where English or French is the language of instruction.

Applications. A detailed description of the program can be obtained from the Graduate Diploma in Sport Administration, Program Director, John Molson School of Business, Concordia University, Room GM 710-23, 1455 de Maisonneuve Blvd. West, Montreal, Quebec H3G 1M8. Applicants can apply online at: http://welcome.concordia.ca/.

Application Deadlines. The deadlines for applications are June 15 for the Fall term; October 15 for the Winter term; and February 15 for the Summer term.

Requirements for the Diploma

1. **Program Structure.** The program consists of 10 courses (30 credits), 6 of which are core courses (18 credits), and the remaining 4 courses (12 credits) including the Internship/Research Project are taken in the Sport Administration Specialization. Students must register for courses according to the sequence specified by the program.

2. **Time Limit.** It is expected that full-time students complete the program within 6 terms (2 years), and part-time students complete it within 12 terms (4 years), from the initial registration into the program. A student enrolled on a full-time basis could complete the program in one calendar year, provided that he/she does not have any additional entry requirements.

3. **Course Load for Full-time Students.** Students must register for 8 or more credits per term.

4. **Course Load for Part-time Students.** Students who are not full-time as described above are classified as part-time students. They must complete the DSA program within 4 years.

5. **Academic Standing.** The scholastic performance of all students will be reviewed on a regular basis at the end of each term. This assessment is based on the final grades of the courses completed during the term. The purpose of the review is to monitor the students' status and progress, to maintain the standards expected by the John Molson School of Business, and to assist students in achieving success in the program.

   To be considered in good standing, a student must have:
   a. successfully completed the required course load specified in paragraphs 3 or 4 above, and

b. achieved a grade point average (GPA) of 3.00 or better since the previous review or since admission in the case of the first review.

A student who has not fulfilled the requirements for good standing is considered either a failed student or a student on conditional standing.

Potential graduates who have not fulfilled the requirements for good standing must apply to the DIA/DSA Program Committee to determine the requirements that they must meet in order to be reinstated as students in good standing, and thus be considered for graduation.

6. **Conditional Standing.** Students with no failures on record who have not met the conditions for good standing will be placed on conditional standing (probation). Students on conditional standing will be required to achieve a GPA of 3.00 or better in the courses taken during the probation period. Additional requirements may be specified in individual cases. Students who do not meet the requirements of their conditional standing are considered failed students and are withdrawn from the program. They may apply in writing for reinstatement to the Program Committee.

7. **Failure Regulations.** Students who either fail one or more courses in the program or fail to meet the conditions of their conditional standing are withdrawn from the program. They may apply in writing for reinstatement to the Program Committee.

8. **Graduation Requirement.** In order to graduate, students must have a minimum cumulative GPA of 3.00.

Program Structure

Qualifying Courses

Normally, students who require qualifying courses will complete them prior to beginning their program of study.

COMM 610 Basic Quantitative Skills for Administration (3 credits)
Refer to page 581 for course description.
Note: Students who have taken COMM 500 or COMM 600 may not receive credit for this course.

Required Core Courses

Students must take all of the following 6 courses:

ACCO 610 Accounting for Not-for-Profit Organizations (3 credits)
The objective of this course is to acquaint students considering an administrative career in not-for-profit, sport or public sector organizations with the

fundamentals of accounting and financial management as they are used for reporting, planning, control, financing and evaluation in those organizations.
Note: Students who have taken ACCO 510 may not receive credit for this course.

DESC 611 Management Information Systems with Applications in Not-for-Profit and Sport Organizations (3 credits)
Prerequisite: INTE 290 or equivalent.
This course is designed for students of management and administration practices in not-for-profit, arts, health care, sport, para-public and public organizations. Its focus is the impact of information systems on the effectiveness of managers and end users. Its objective is to build a basic understanding of the value and uses of information systems and telecommunications for daily operations, and management decision making in cultural, public, sport, para-public and health care sector organizations. Though not designed as a course in computer literacy, it does include topics that give a "managerial overview" of information technology.
Note: Students who have taken DESC 511 may not receive credit for this course.

DESC 613 Quantitative Research Methods in Organizations (3 credits)
Prerequisite: COMM 610 or equivalent.
This course introduces the fundamentals of quantitative research methods as applied in the various areas of administration. Topics covered include statistics and scientific methodology, sample survey techniques (questionnaire design, survey methods, sample design and analysis), contingency table analysis, regression and correlations analysis, and analysis of variance and experimental design (completely randomized design and randomized blocks design).
Note: Students who have taken DESC 513 may not receive credit for this course.

DESC 615 Managerial Economics with Applications in Not-for-Profit and Sport Organizations (3 credits)
Prerequisite: COMM 610 or equivalent.
This course introduces students to an analytical and quantitative approach to the study of economic problems confronting organizations in the not-for-profit, art, health care, sport, public and para-public sectors. It presents a thorough and rigorous analysis of the theory of consumer behaviour and the theory of behaviour of the organization under conditions of certainty and uncertainty. The theory and practical importance of managerial analysis in the determination of optimal output and pricing are examined. An extensive analysis of market structures and a rationale for the existence of various organizations will be presented. Emphasis will be placed on the use of selected quantitative techniques and models for the analysis and understanding of problems specific to not-for-profit and sport organizations, and the functional differences between these organizations and the traditional market firm.
Note: Students who have taken DESC 515 may not receive credit for this course.

MANA 600 Organizational Behaviour and Administrative Theory for Not-for-Profit and Sport Organizations (3 credits)
This course will review the important developments in administrative and behavioural thinking and focus on the work of management scholars who have made significant contributions to the practice of management. The course will span the various levels of organizational analysis (individual, group, organization and environment) and review a variety of perspectives on organizational behaviour, organizational theory and administrative thought. Students are expected to understand and be able to critically assess the impact of concepts, theories, and scholarly contributions of material covered. The course will address the issues of management related to organizations in the not-for-profit, cultural, sport, public and para-public sectors.
Note: Students who have taken MANA 500 may not receive credit for this course.

MARK 610 Marketing for Not-for-Profit Organizations (3 credits)
This course is an introduction to the principles of marketing in an administrative setting. The course views the subject matter from both societal and managerial standpoints. It includes discussion of the role and importance of marketing in society, some ethical considerations as well as the tools and skills available for operational efficiency.
Note: Students who have taken MARK 510 may not receive credit for this course.

Specialization Courses

Students must take all of the following 4 courses.

GDSA 651 Sport and Cultural Event Management (3 credits)
Prerequisite: MANA 600 and MARK 610, previously or concurrently.
This course provides a practical approach to the design and management of sport and cultural events. Event management is one of the fastest growing career fields. With resources, reputation and image at stake, corporations, schools, and other organizations now rely on skilled professionals to design, plan and manage effective, successful, memorable and profitable events. Examples of sport and cultural events will be drawn from amateur and professional sports, sport tourism, festivals and fundraising activities. They will include events at the local, national and international levels. Event management is a dynamic and challenging endeavour that obliges students to integrate their knowledge and skills across all the functional areas of management in order to successfully apply them to the context of event management.
Note: Students who have taken GDSA 551 may not receive credit for this course.

GDSA 652 Management and Operations of Sport, Arts and Cultural Facilities (3 credits)
This course will provide a basic understanding of the planning process in developing and designing sport, arts and cultural facilities. Studied are the major functions of resource planning, principles, terminology and standards using the specialized techniques related to these facilities. The course will examine in detail the central tenets of organizational and management theory and their applications in sport, arts and cultural facilities. The course will deal with organizational and human resources theories and their relation to facilities management. Moreover, this course will give students a brief overview of the role that economics, financial management, marketing, and fund raising play in the continual development of skilled managers interested in sport, arts and cultural facilities.
Note: Students who have taken GDSA 552 may not receive credit for this course.

GDSA 664 Economics for Sport and Leisure (3 credits)
Prerequisite: COMM 610, or equivalent; DESC 615, previously or concurrently.
This course introduces students to the application of economics in sport and the use of basic concepts of price theory, market competition, and bargaining theory as aids to managerial decision making in sport and leisure organizations. It will also examine some issues of resource allocation and the effect of government market regulations on the competitive strategies of managers (owners) and players in commercial sports.

GDSA 691 Sport Administration Internship (3 credits)
Note: Students who have taken GDSA 591 may not receive credit for this course.
OR
GDSA 692 Sport Administration Research Project (3 credits)
Note: Students who have taken GDSA 592 may not receive credit for this course.

Elective Courses

Students who are granted exemptions from DSA courses upon admission will choose elective courses in consultation with the DIA/DSA Program Director. Courses may be chosen from the following list of elective courses under the Graduate Diploma in Administration program, or the full range of graduate courses offered by the University. Permission must be obtained from the department or program in which the course is offered.

* **GDSA 622 Law for Charitable, Not-for-Profit, Sport and Entertainment Organizations** (3 credits)
Note: Students who have taken GDSA 522 may not receive credit for this course.

* **GDSA 642 Public Relations and Fundraising for Not-for-Profit Organizations** (3 credits)
Note: Students who have taken GDSA 542 may not receive credit for this course.

* **GDSA 662 Project and Event Management** (3 credits)
Prerequisite: DESC 611 or equivalent.
Note: Students who have taken GDSA 562 may not receive credit for this course.

* **GDSA 663 Total Quality Management in Sport and Not-for-Profit Organizations** (3 credits)
Prerequisite: COMM 610 or equivalent.
Note: Students who have taken GDSA 563 may not receive credit for this course.

GDSA 681 Special Topics in Accountancy (3 credits)
GDSA 682 Special Topics in Decision Science and M.I.S. (3 credits)
GDSA 683 Special Topics in Finance (3 credits)
GDSA 684 Special Topics in Management (3 credits)
GDSA 685 Special Topics in Marketing (3 credits)

* These courses are cross-listed with courses from the DIA Program.

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website: http://www.johnmolson.concordia.ca/diadsa

Graduate Certificates in Administration

Director: Dr. Clarence S. Bayne; *Assistant Director, Marketing and Student Affairs*: Lissa Matyas; *Assistant Director, Admissions and Administration*: Chen Feng Huang

Graduate Certificate in Event Management and Fundraising

The Graduate Certificate in Event Management and Fundraising provides professionals in the not-for-profit sector with a solid training in the fundamentals of event management, fundraising, marketing and promotion, planning and administrative theories and principles that will make them more efficient managers and fundraisers. The program is focused on not-for-profit organizations and event management enterprises (arts and cultural organizations, charitable foundations, festivals, sport and recreation associations, cultural tourism agencies). It targets managers of sport and cultural events, conference and tourism planners, project and event managers, and fundraising event specialists.

Graduate Certificate in Management of Health Care Organizations

The Graduate Certificate in Management of Health Care Organizations provides medical and other professionals and managers, who cannot take time out to do a full graduate diploma, with a solid training in management, health care finance and economics, total quality management, and management information systems. The Program is geared towards health care and health care delivery organizations such as hospitals, CLSCs, home care services, ambulatory services and health clubs. It aims at training competent and efficient managers and administrators or health information scientists/technologists who can meet the needs of the ever-changing health care system in Quebec and in Canada.

Graduate Certificate in Community Organizational Development

The Graduate Certificate in Community Organizational Development provides students with a solid training in the fundamentals of accounting, economics, management, law, public relations, fundraising, and project and event management that would allow them to become social entrepreneurs and efficient managers. The program is directed to those involved in community organizational development, social enterprise development, and social entrepreneurship. Specifically, Community Organizational Development deals with managerial and organizational issues associated with local governments,

urban politics, community policing, globalization and local action, local decision-making, homelessness, gender, ethnicity, decentralizing the Welfare State, representation and social responsibility.

Admission Requirements. Applicants must possess a Bachelor's degree with high standing from a recognized university. Applicants are evaluated according to the following:

1. Academic standing in their undergraduate and/or graduate program(s).
2. Performance on either the Graduate Management Admission Test (GMAT) or Graduate Record Examination (GRE). However, students with a master's or doctoral degree may be exempted from doing such tests at the discretion of the Admissions Committee.
3. Professional and/or other relevant experience.
4. Detailed letters of recommendation.
5. Statement of purpose.

Competence in Mathematics, Statistics and Computer Skills. Students are required to have these skills before they enter the program **or** to complete appropriate courses in their first term. They must take these courses in addition to their regular program requirements. Students who intend to complete the program in one calendar year are strongly advised to satisfy these skills requirements or take appropriate courses before beginning the program.

Students who do not have sufficient mathematics and/or statistics skills will be required to complete COMM 610 or an equivalent. In some cases where students do not have the basic knowledge of mathematics, they will be required to take an additional basic math course at the undergraduate level before taking COMM 610. Students who lack the necessary computer skills will be required to complete INTE 290 or an equivalent.

Proficiency in English or French. Applicants whose first language is neither English nor French and who are not Canadian citizens or landed immigrants must achieve a satisfactory performance in the Test of English as a Foreign Language (TOEFL) before being considered for admission. This requirement will be waived for foreign students completing their undergraduate degrees at a university where English or French is the language of instruction.

Applications. A detailed description of the program can be obtained from the Graduate Certificates in Administration, Program Director, John Molson School of Business, Concordia University, Room GM 710-23, 1455 de Maisonneuve Blvd. West, Montreal, Quebec H3G 1M8. Applicants can apply online at: http://welcome.concordia.ca/.

Application Deadlines. The deadlines for applications are June 15 for the Fall term; October 15 for the Winter term; and February 15 for the Summer term.

Requirements for the Certificates

1. **Program Structure.** The Graduate Certificate in Management of Health Care Organizations and the Graduate Certificate in Community Organizational Development each consist of 6 courses (18 credits), 4 of which are core courses and 2 elective courses. The Graduate Certificate in Event Management and Fundraising consists of 6 course (18 credits), 3 of which are core courses, 2 career option courses, and 1 elective course. The courses are selected from courses currently offered in the Graduate Diploma in Administration (DIA) program.

2. **Time Limit.** It is expected that full-time students complete the program within 6 terms (2 years), and part-time students complete it within 12 terms (4 years), from initial registration into the program. A student enrolled on a full-time basis could complete the program in one calendar year, provided that he/she does not have any additional entry requirements.

3. **Course Load for Full-time Students.** Students must register for 8 or more credits per term.

4. **Course Load for Part-time Students.** Students who are not full-time as described above are classified as part-time students. They must complete the graduate certificate program within 4 years.

5. **Academic Standing.** The scholastic performance of all students will be reviewed on a regular basis at the end of each term. This assessment is based on the final grades in the courses completed during the term. The purpose of the review is to monitor the students' status and progress, to maintain the standards expected by the John Molson School of Business and to assist students in achieving success in the program.

   To be considered in good standing, a student must have:
   a. successfully completed the required course load specified in paragraphs 3 or 4 above, and
   b. achieved a grade point average (GPA) of 3.00 or better since the previous review or since admission in the case of the first review.

   A student who has not fulfilled the requirements for good standing is considered either a failed student or a student on conditional standing (probation).

   Potential graduates who have not fulfilled the requirements for good standing must apply to the DIA/DSA Program Committee to determine the requirements that they must meet in order to be reinstated as students in good standing, and thus be considered for graduation.

6. **Conditional Standing.** Students with no failures on record who have not met the conditions for good standing will be placed on conditional standing (probation). Students on conditional standing will be required to achieve a GPA of 3.00 or better in the courses taken during the probation period. Additional requirements may be specified in individual cases. Students who do not meet the requirements of their conditional standing are considered failed students and are withdrawn from the program. They may apply in writing for reinstatement to the Program Committee.

7. **Failure Regulations.** Students who either fail one or more courses in the program or fail to meet the conditions of their conditional standing are withdrawn from the program. They may apply in writing for reinstatement to the Program Committee.

8. **Graduation Requirement.** In order to graduate, students must have a minimum cumulative GPA of 3.00.

Graduate Certificate in Event Management and Fundraising

Qualifying Courses

Normally, students who require qualifying courses will complete them prior to beginning their program of study.

COMM 610 **Basic Quantitative Skills for Administration** (3 credits)
Refer to page 581 for course description.
Note: Students who have taken COMM 500 or COMM 600 may not receive credit for this course.

Required Core Courses *(Students must take all the following **3** courses.)*

ACCO 610 **Accounting for Not-for-Profit Organizations** (3 credits)
Note: Students who have taken ACCO 510 may not receive credit for this course.

* **GDIA 642** **Public Relations and Fundraising for Not-for-Profit Organizations** (3 credits)
Note: Students who have taken GDIA 542 may not receive credit for this course.

MANA 600 **Organizational Behaviour and Administrative Theory for Not-for-Profit and Sport Organizations** (3 credits)
Note: Students who have taken MANA 500 may not receive credit for this course.

Career Option Courses *(Students choose **one** of the following clusters.)*

Cluster A **Fundraising**

DESC 611 **Management Information Systems with Applications in Not-for-Profit and Sport Organizations** (3 credits)
Prerequisite: INTE 290 or equivalent.
Note: Students who have taken DESC 511 may not receive credit for this course.

* **GDIA 662** **Project and Event Management** (3 credits)
Prerequisite: DESC 611 or equivalent.
Note: Students who have taken GDIA 562 may not receive credit for this course.

Cluster B **Event Management**

* **GDIA 651** **Sport and Cultural Event Management** (3 credits)
Prerequisites: MANA 600 and MARK 610, previously or concurrently.
Note: Students who have taken GDIA 551 may not receive credit for this course.

MARK 610 **Marketing for Not-for-Profit Organizations** (3 credits)
Note: Students who have taken MARK 510 may not receive credit for this course.

Elective Courses *(Students choose **one** course from the following list.)*

* **GDIA 622** **Law for Charitable, Not-for-Profit, Sport and Entertainment Organizations** (3 credits)
Note: Students who have taken GDIA 522 may not receive credit for this course.

GDIA 641 **Marketing the Arts, Culture and Tourism** (3 credits)
Prerequisite: MARK 610, previously or concurrently
Note: Students who have taken GDIA 541 may not receive credit for this course.

* **GDIA 651** **Sport and Cultural Event Management** (3 credits)
Prerequisites: MANA 600 and MARK 610, previously or concurrently
Note: Students who have taken GDIA 551 may not receive credit for this course.

* **GDIA 662** **Project and Event Management** (3 credits)
Prerequisite: DESC 611 or equivalent
Note: Students who have taken GDIA 562 may not receive credit for this course.

GDIA 685 **Special Topics in Marketing** (3 credits)

Practicum

Students have the option to do a non-credit practicum in fundraising or event management on completion of their coursework.

Graduate Certificate in Management of Health Care Organizations

Qualifying Courses

Normally, students who require qualifying courses will complete them prior to beginning the Certificate courses.

COMM 610 **Basic Quantitative Skills for Administration**
Refer to page 581 for course description.
Note: Students who have taken COMM 500 or COMM 600 may not receive credit for this course.

Required Core Courses *(Students must take all the following **3** courses.)*

ACCO 610 **Accounting for Not-for-Profit Organizations** (3 credits)
Note: Students who have taken ACCO 510 may not receive credit for this course.

DESC 615 **Managerial Economics with Applications for Not-for-Profit and Sport Organizations** (3 credits)
Prerequisite: COMM 610 or equivalent
Note: Students who have taken DESC 515 may not receive credit for this course.

MANA 600 **Organizational Behaviour and Administrative Theory for Not-for-Profit and Sport Organizations** (3 credits)
Note: Students who have taken MANA 500 may not receive credit for this course.

Optional Core Courses *(Students choose **one** course from the following list.)*

DESC 611 **Management Information Systems with Applications in Not-for-Profit and Sport Organizations** (3 credits)
Prerequisite: INTE 290 or equivalent.
Note: Students who have taken DESC 511 may not receive credit for this course.

DESC 613 **Quantitative Research Methods in Organizations** (3 credits)
Prerequisite: COMM 610 or equivalent.
Note: Students who have taken DESC 513 may not receive credit for this course.

MARK 610 **Marketing for Not-for-Profit Organizations** (3 credits)
Note: Students who have taken MARK 510 may not receive credit for this course.

Elective Courses *(Students choose **2** from the following list.)*

GDIA 631 **Management and Policy in Health Care Delivery** (3 credits)
Note: Students who have taken GDIA 531 may not receive credit for this course.

GDIA 632 **Health Care Economics and Finance** (3 credits)
Prerequisite: COMM 610 or equivalent, ACCO 610 and DESC 615.
Note: Students who have taken GDIA 532 may not receive credit for this course.

* **GDIA 663** **Total Quality Management in Sport and Not-for-Profit Organizations** (3 credits)
Prerequisite: COMM 610 or equivalent.
Note: Students who have taken GDIA 563 may not receive credit for this course.

Graduate Certificate in Community Organizational Development

Qualifying Courses

Normally, students who require qualifying courses will complete them prior to beginning the Certificate courses.

COMM 610 **Basic Quantitative Skills for Administration**
Refer to page 581 for course description.
Note: Students who have taken COMM 500 or COMM 600 may not receive credit for this course.

Required Core Courses *(Students must take all the following **3** courses.)*

ACCO 610 **Accounting for Not-for-Profit Organizations** (3 credits)
Note: Students who have taken ACCO 510 may not receive credit for this course.

DESC 615 **Managerial Economics with Applications for Not-for-Profit and Sport Organizations** (3 credits)
Prerequisite: COMM 610 or equivalent
Note: Students who have taken DESC 515 may not receive credit for this course.

MANA 600 **Organizational Behaviour and Administrative Theory for Not-for-Profit and Sport Organizations** (3 credits)
Note: Students who have taken MANA 500 may not receive credit for this course.

Optional Core Courses *(Students choose **one** course from the following list.)*

DESC 611 **Management Information Systems with Applications in Not-for-Profit and Sport Organizations** (3 credits)
Prerequisite: INTE 290 or equivalent.
Note: Students who have taken DESC 511 may not receive credit for this course.

DESC 613 **Quantitative Research Methods in Organizations** (3 credits)
Prerequisite: COMM 610 or equivalent.
Note: Students who have taken DESC 513 may not receive credit for this course.

MARK 610 **Marketing for Not-for-Profit Organizations** (3 credits)
Note: Students who have taken MARK 510 may not receive credit for this course.

Elective Courses *(Students choose **2** from the following list.)*

GDIA 621 **Not-for-Profit Managerial and Administrative Theory and Practice** (3 credits)
Note: Students who have taken GDIA 521 may not receive credit for this course.

* **GDIA 622** **Law for Charitable, Not-for-Profit, Sport and Entertainment Organizations** (3 credits)
Note: Students who have taken GDIA 522 may not receive credit for this course.

* **GDIA 651** **Sport and Cultural Event Management** (3 credits)
Prerequisites: MANA 600, previously or concurrently; MARK 610, previously or concurrently.
Note: Students who have taken GDIA 551 may not receive credit for this course.

* **GDIA 662** **Project and Event Management** (3 credits)
Prerequisite: DESC 611.
Note: Students who have taken GDIA 562 may not receive credit for this course.

GDIA 666 **Managing Resources in Community Services, Public, and Para-public Organizations** (3 credits)
Prerequisite: MANA 600, previously or concurrently.
Note: Students who have taken GDIA 566 may not receive credit for this course.

* These courses are cross-listed with courses from the Graduate Diploma in Sport Administration (DSA) program.

For course descriptions and required prerequisites, please refer to the course information for the Graduate Diploma in Administration (DIA) Program beginning on page 641.

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Diploma in Chartered Accountancy

Director: Wendy Roscoe; *Program Officer:* Teresa Zuccaro

The John Molson School of Business offers a graduate Diploma in Chartered Accountancy that prepares students for careers in chartered accountancy. This program is recognized by l'Ordre des comptables agréés du Québec (Quebec Order of Chartered Accountants) as qualification to write the Uniform Final Examination (UFE). The teaching faculty includes leading practitioners in public accountancy, assurance, information technology and taxation.

Admission Requirements. Applicants must possess a bachelor's degree. Students holding an undergraduate degree with a major in Accountancy, with high academic standing (minimum 3.00 GPA plus *B-* grade in specified courses), will normally have satisfied the prerequisite requirements. Applicants lacking an appropriate pattern of undergraduate work will be required to successfully complete certain qualifying courses, as assigned by the Director.

Applications. A detailed description of the program may be obtained from the Assistant to the Director, Diploma in Chartered Accountancy Program, The John Molson School of Business, Concordia University, 1455 de Maisonneuve Blvd. West, Montreal, Quebec, H3G 1M8. Applicants can apply online at: http://welcome.concordia.ca/.

Application Deadlines. The deadline for application is June 1 for the fall term, October 1 for the winter term, February 1 for the summer term.

Requirements for the Diploma

1. **Credits.** A candidate is required to complete a minimum of 30 credits (7 one-term courses).

2. **Completion.** It is possible for a student to complete the program in one year, if enrolled on a full-time basis. Students enrolled on a part-time basis generally complete the program in two years.

Academic Regulations

1. **Academic Standing**. The scholastic performance of all students will be reviewed at the end of each term based on the final grades for the courses completed during the term. To be considered in good standing, students must achieve a minimum cumulative grade point average (CGPA) of 2.70.

2. **Conditional Standing**. Conditional standing is used to monitor the progress of students experiencing difficulty and to assist them in completing the program successfully. Students on conditional standing must achieve a minimum GPA of 2.70 during the period of conditional standing.

3. **Failure Regulation**. A student who fails a course will be withdrawn from the program. The student will have the right to appeal for reinstatement. Please refer to the Academic Regulations concerning No-Cr (no credit grades).

4. **Time Limit.** All work for a diploma program must be completed before or during the calendar year, two years from the year of initial registration in the program for full-time students; for part-time students the time limit is four calendar years.

5. **Graduation Requirement.** In order to graduate, students must have a cumulative GPA of at least 2.70.

Diploma Courses

ACCO 612 Financial Accounting Theory in Practice (4 credits)
This course addresses the application of accounting theory to practice. Topics include an examination of different approaches to financial accounting, the accounting standard setting process, the basic components of alternative accounting frameworks, and financial statement disclosure.
Note: Students who have taken ACCO 512 may not receive credit for this course.

ACCO 613 Financial Accounting: Comprehensive Applications (4 credits)
Prerequisite: ACCO 612.
This course builds on the materials examined in Accounting 612. Study will focus on the integration of financial accounting theory with current reporting practices.
Note: Students who have taken ACCO 513 may not receive credit for this course.

ACCO 631 Business Advisory Services (4 credits)
This course integrates knowledge obtained in various areas of accounting, auditing and taxation to solve problems covering a variety of business situations.
Note: Students who have taken ACCO 531 may not receive credit for this course.

ACCO 635 An Integrated Approach to Auditing (4 credits)
Prerequisites: ACCO 678, ACCO 643; *Co-requisite:* ACCO 613.
This course introduces advanced topics in auditing as well as important CICA Handbook sections not previously covered in other auditing courses.

Note: Students who have taken ACCO 535 may not receive credit for this course.

ACCO 643 Income Taxation (4 credits)
The course focuses on specialized topics in taxation. Coverage includes tax planning concepts and techniques; taxation aspects of business decisions, including purchase and sale of a business; transfers to and from a corporation; estate freezes; and corporate reorganizations.
Note: Students who have taken ACCO 543 may not receive credit for this course.

ACCO 678 Contemporary Issues for Accountants (4 credits)
This course covers topics that will be of particular interest to chartered accountants. The topics covered will vary depending upon the issues that are of relevance to the profession given the nature of the business environment.
Note: Students who have taken ACCO 577 or ACCO 578 may not receive credit for this course.

ACCO 685 Comprehensive Case Analysis and Integration, and Uniform Final Examination (UFE) Preparation (6 credits)
Prerequisites: ACCO 613, ACCO 631, ACCO 635 or permission from the Program Director.
This course consists of comprehensive case analysis and integration and UFE preparation components and is intended for those students who plan to write the UFE in the year the course is taken.
Note: Students who have taken ACCO 585 may not receive credit for this course.

The course focuses on the integration of knowledge obtained in all other Diploma in Chartered Accountancy courses and builds application, diagnostic, analytical, and case writing skills through case analysis. In addition, the course includes UFE preparation seminars offered throughout the summer. Lectures are given on major UFE competency map areas by experts, and students focus on writing practice UFE questions.
Note: There is a surcharge for this module.

Elective Courses

ACCO 690 Special Seminar in Accounting (1 credit)
Note: Students who have taken ACCO 590 may not receive credit for this course.

ACCO 690A Introduction to Exam Writing Techniques (1 credit)
The objective of this course is to introduce the student to the requirements of the UFE board of examiners in assessing professional capabilities. The course is an introductory exam-writing techniques seminar that emphasizes the proper

application of core knowledge and professional skills to exam scenarios. It is intended for those students entering the Diploma in Chartered Accountancy program who have experienced difficulties in communicating core knowledge in exam scenarios. Students will be expected to complete preparatory work in advance of the seminar.
Note: Students who have taken ACCO 590A may not receive credit for this course.

ACCO 690B Advanced Exam Writing Techniques (1 credit)
The objective of this course is to develop the concepts that have been introduced to the student in ACCO 690A (or in a prior course setting). The course is an advanced exam-writing techniques seminar that emphasizes the professional skills required to deal with unusual and complex exam scenarios. It is intended for those students who plan to write the UFE within the year. Students will be expected to complete preparatory work in advance of the seminar.
Note: Students who have taken ACCO 590B may not receive credit for this course.

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Graduate Certificate in Management Accounting

Program Director: Trevor Hagyard; *Program Officer:* Teresa Zuccaro

The Graduate Certificate in Management Accounting is a specialized program offered in cooperation with the Ordre des comptables en management accrédités du Québec. This program is designed for candidates who hold management positions in organizations. The program will enhance the candidates' knowledge in the areas of financial accounting, management accounting and financial management and will allow them to pursue the Certified Management Accountant (CMA) designation.

Program Objectives

The program is designed to upgrade the candidates' knowledge in accounting and its interface with management, finance, and related disciplines. The acquired knowledge will assist the participants in becoming effective and more efficient in carrying out the organization's operations and in achieving the organization's objectives.

Admission Requirements

Applications to the program should be addressed to: Ordre des comptables en management accrédités du Québec, 715 Square Victoria, 3e étage, Montréal, Québec H2Y 2H7.

Acceptance into the program is based on the following:

1. A bachelor's degree (with a minimum cumulative grade point average of 2.70 on a scale of 4.30, or equivalent), or qualifications accepted as equivalent by the Council of the School of Graduate Studies.

2. A minimum of five years of relevant experience in a managerial position.

Application Deadline. The deadline for application is May 1 for the Fall term.

Academic Regulations

1. **Time Limit**. All students must complete the program within three years from the initial registration into the program.

2. **Academic Standing**. The scholastic performance of all students will be reviewed at the end of each term based on the final grades for the courses

completed during the term. To be considered in good standing, students must achieve a minimum cumulative grade point average (CGPA) of 2.70.

3. **Conditional Standing**. Conditional standing is used to monitor the progress of students experiencing difficulty and to assist them in completing the program successfully. Students on conditional standing must achieve a minimum GPA of 2.70 during the period of conditional standing.

4. **Failure Regulation**. Students who fail (a) one or more courses in the program, or (b) the requirements for their conditional standing are withdrawn from the program. They may apply in writing for reinstatement.

5. **Graduation**. To graduate, students must achieve a minimum cumulative GPA of 2.70.

Requirements for the Certificate

The program consists of seven courses (21 credits). Transfer credits may be given for a maximum of two courses if, in the opinion of the program committee, the applicant has successfully completed the equivalent of a given course in a graduate program at another recognized university.

The program can be completed on a part-time basis over a period of 18 months (no classes during summer).
Please note that the program's courses, including dates for withdrawals from courses, do not follow the regular time periods listed at the start of this calendar. Please consult the program director for details.

The seven courses are:

ACCO 561 Financial Accounting I
ACCO 562 Management Accounting I
ACCO 571 Financial Accounting II
ACCO 572 Management Accounting II
ACCO 581 Financial Accounting III
FINA 520 Applied Financial Management
ACCO 582 Comprehensive Case Analysis

Courses

ACCO 561 Financial Accounting I
This course examines the theory and practice involved in measuring, reporting, and analyzing an organization's financial information. It provides an overview of the content of annual reports with an emphasis on the generally accepted accounting principles underlying the preparation of financial statements. The

course focuses on: the measurement and reporting of an organization's assets, liabilities, and equity; the measurement of accounting income; and, the preparation of the cash flow statement.

ACCO 562 Management Accounting I
This course covers the development of accounting information to assist management in utilizing an organization's resources effectively and efficiently. Concepts and techniques for planning, performance evaluation, and control are introduced, with an emphasis on the classification and analysis of costs for decision making.

ACCO 571 Financial Accounting II
Prerequisite: ACCO 561
This course extends the material covered in Financial Accounting I, integrating the previous work with more advanced accounting theory and application. Topics covered include: accounting for leases, pension costs and obligations, income tax allocations, and financial instruments; earnings per share; future-oriented financial information, and analysis of financial statements.

ACCO 572 Management Accounting II
Prerequisite: ACCO 562
This course provides an examination of the techniques, systems and procedures applicable to the managerial use of accounting information for planning, decision-making and control. Topics include budgeting and analysis of variances, evaluation of managerial performance, and transfer pricing, as well as new developments in management accounting concepts and techniques.

ACCO 581 Financial Accounting III
Prerequisite: ACCO 571
This course examines the theory and practice of accounting for intercorporate investments, business combinations, consolidation of financial statements, related party transactions, disaggregated information, foreign currency translation and hedging transactions. The course also examines accounting for not-for-profit organizations.

FINA 520 Applied Financial Management
Prerequisite: ACCO 561 and ACCO 562
This course provides a general understanding of the fundamental concepts underlying the financing and investment decisions of organizations. The topics covered in this course include: the role of financial markets and intermediaries, the foundations for the relationship between risk and return and their measurements, the cost of capital and its measurement, capital structure and leverage, working capital management, and dividend policy and valuation.

ACCO 582 Comprehensive Case Analysis
Prerequisite: ACCO 581 and FINA 520
The objective of this course is to integrate the financial and managerial accounting knowledge acquired in the previous courses. It also incorporates relevant topics in related areas including: internal control, auditing, information systems, taxation, business law, organizational behaviour, marketing and enterprise management. Integration of these topics will be achieved through case analyses.

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Graduate Certificate in e-Business

Director: Dr. Harjeet Bhabra

Note: Admission is suspended for the 2006-2007 academic year.

The basic principles and architectures of electronic business (e-business) systems and the underlying computer and communication technologies form the core of the program. Courses focus on management, business functions, and the technologies as well as their use in e-business. Students will learn about e-business experiences, and their underlying models and systems. They augment this knowledge with recent theoretical advances, and with proven approaches and methods that are adapted to satisfy present and future requirements.
The main foci of the program are to study:

- the roles of functional business areas in e-business;
- the impact of information technology infrastructure on business models and systems;
- specialized, organization-wide and global information systems and applications; and
- the relationships between organizational forms and business functions and the information technologies.

The GCEB program is designed to upgrade participants' knowledge in applications of information technologies to e-business and the roles information technologies play in the integration of all business functions. The acquired knowledge will assist the participants in becoming more effective and efficient in participating in an organization's development and adoption of information systems for all aspects of e-business. The skills the participants will acquire are instrumental in the analysis of business processes and e-business application development. These skills will also help them to assist organizations in incorporating e-business models and systems in their strategy, planning, and practice.

Program Objectives

The GCEB program examines key aspects of information systems and technologies, and how they relate to networked and on-line commerce. It has been designed for individuals interested in learning about the concepts of management and technology of e-business and related areas, as well as those interested in acquiring the knowledge and technical skills necessary for the development of e-business systems and their use in various organizational settings.

The *three key objectives* of the program are to provide students with:

1. An understanding of the roles of the information technology infrastructure; of specialized, organization-wide and global information systems; and of the relationships between organizational forms and business functions, and the information technologies.
2. Skills to analyze and develop applications for e-business; to integrate specialized applications within the business information architecture; and to manage customer relationships.
3. Knowledge to assist organizations in incorporating e-business models and systems in their strategy, planning, and practice.

Program Description

E-business is a combination of technology and business; people who wish to pursue a career in e-business need foundations in both. There are career opportunities for skillful people whether their base is technology education or business education. Some of the most interesting career opportunities, however, are open to those who have knowledge in both technology and business. To reflect these requirements the Certificate is offered as: 4 *core courses* (3 credits each) and 2 *elective courses* (3 credits each) for a total of 18 credits.

The four *core courses* are the program's foundation. The first course introduces students to the fundamental issues of e-business from the managerial perspective at all organizational levels. The second course presents an overview of the key Internet technologies, and the principles of e-business architectures. The third course evaluates the impact of the Internet on traditional tools of marketing and marketing areas, including consumer behaviour, marketing strategy and marketing planning. The fourth course focuses on the most recent approaches for developing and implementing e-business applications.

Management courses emphasize the opportunities for integrating electronic commerce with business processes in the areas of finance, marketing, accounting, and operations management. Students learn how to improve relationships with customers within an on-line context, how to better understand customers' behaviour by mining the collected data and to forecast their buying patterns, how to control the flow of transactions in an electronic environment both within an organization and between the organization and its suppliers and customers, and how to create new market strategies to attract and keep customers on websites.

Technology courses emphasize the technologies used to support electronic commerce and the methods required for the development of e-business applications. Students learn how to develop, implement, and use information systems in e-business and also learn the role of technology in all dimensions of business. They acquire technical expertise enabling them to work in cross-

functional or multi-skilled environments for the development and implementation of e-business solutions in a wide range of organizations.

Admission Requirements. The admission requirements for the Graduate Certificate in e-Business Program are:

1. A bachelor's degree with high standing, or academic qualifications accepted as equivalent by the School of Graduate Studies.
2. A satisfactory performance on the Graduate Management Admission Test (GMAT) or the Graduate Record Examination (GRE). However, students with a master's or doctoral degree may be exempted from doing such tests at the discretion of the Admissions Committee.
3. A minimum of two letters of recommendation, preferably at least one academic reference.
4. A carefully written statement indicating why the applicant believes she/he would benefit from the GCEB Program and what contributions she/he can make to it.

The Program's Admissions Committee evaluates all applications and makes recommendations for admission.

Application Deadlines. For Canadian citizens and landed immigrants, the deadlines for completed applications are June 15 for the Fall term; and October 15 for the Winter term. For international students, to allow for Visa procedures and to be assured consideration by Concordia University, it is recommended that they apply by February 15 for the Fall term, and June 15 for the Winter term, although every effort will be made to accommodate those applications received after the deadline.

Language Requirement. Proficiency in English or French. Applicants whose first language is not English or French and who are not Canadian citizens or landed immigrants must obtain a satisfactory score in the Test of English as a Foreign Language (TOEFL) before being considered for admission. This requirement will be waived for foreign students completing their undergraduate degrees at a university where English or French is the language of instruction.

General Academic Regulations

Time limit. All students must complete the program within three years from the initial registration into the program.

Academic Standing. The scholastic performance of all students will be reviewed at the end of each term based on the final grades for the courses completed during the term. To be considered in good standing, students must achieve a minimum cumulative grade point average (CGPA) of 3.00.

Conditional Standing. Conditional standing is used to monitor the progress of students experiencing difficulty and to assist them in completing the program successfully. Students on conditional standing must achieve a minimum GPA of 3.00 during the period of conditional standing.

Failure Regulation. Students who fail (a) one or more courses in the program, or (b) the requirements for their conditional standing are dismissed from the program. They may apply in writing for reinstatement to the Program Committee.

Graduation. To graduate, students must achieve a minimum cumulative grade point average (CGPA) of 3.00.

Requirements for the Certificate

The Graduate Certificate in e-Business is an 18-credit program with 12 credits from the core courses and 6 credits from the elective courses (all courses are listed below). Students may select management and/or technology electives provided that they have the required prerequisites for each selected course.

Core Courses (12 credits): GCEB 610, 620, 631, 643.

Elective Courses (6 credits) selected from the following:

Management: GCEB 632, 634, 636, 695
Technology: GCEB 644, 646, 695

Advanced Standing for the MBA Program.
Students in good academic standing in the CGEB program may, upon meeting the admission requirements of the John Molson MBA program, be granted advanced standing of up to 18 transfer credits. Students must withdraw from the CGEB program before they can obtain transfer credits.
Note: Students who have had their GCEB certificate conferred will not receive transfer credits from the MBA program. Course exemptions may be granted, but the exempted courses must be replaced by alternative courses.

Courses

The four core courses provide a basic understanding of e-business and its technological infrastructure. The management courses focus on the business infrastructure, as well as the organization and conduct of business functions in e-business organizations. The objective is to provide information on the specifics of marketing, finance, accounting, operations and other functions in the electronic environment. They also provide students with knowledge of the issues that managers encounter in e-business, as well as skills in the use of information systems for business functions. The technology courses focus on the

analysis and development of systems used in e-business. The objectives of the courses are to teach system development methodologies, databases and data warehouses, planning, construction and management of websites and web-based systems, and system deployment and management.

Core Courses

GCEB 610 Fundamentals of e-Business (3 credits)
This course is designed to examine the fundamental issues concerning e-business, both technical and managerial, at the strategic and operational levels. Topics covered include: e-business strategies and models; strategic role of electronic commerce technologies; underlying technologies; knowledge management; intelligent systems; customer relationship management; trust, money and markets; new organizational forms and virtual enterprises; security and ethical issues. The learning will occur through the study and discussion of conceptual reading material and analysis.

GCEB 620 Underlying Technologies for e-Business (3 credits)
The purpose of this course is to learn the basic concepts and technical aspects of technologies that form the hardware, software and network infrastructure for e-business. These include principles of data communication and local area networks, Internet and web technology, and communication protocols and standards. Students will learn about the basic programming languages and scripts, and acquire skills in using the most common ones employed in the design and development of simple Websites as well as portals, e-business sites, and marts. Teaching methods include lectures, problem solving exercises, laboratory work, and projects including the design and development of a personal Website.

GCEB 631 e-Marketing (3 credits)
This course evaluates the impact of the Internet on traditional tools of marketing and marketing areas, including consumer behaviour, marketing strategy and marketing planning. It explores the impact of the Internet across a range of business functions, including traditional marketing issues such as promotion, advertising and communication; brand building; on-line pricing; intermediaries, infomediaries and market research; business models to generate revenue on the Internet; as well as general business or economic issues such as electronic markets, information economics, legal and ethical concerns.

GCEB 643 Systems Development Methodologies for e-Business (3 credits)
This course focuses on the most recent approaches for developing and implementing e-business applications. Topics include: feasibility analysis, customer behaviour modeling, evaluating e-business infrastructure and services, capacity business systems development, component-based frameworks for e-business, and Web-based technologies. Teaching methods used include lectures on theory and tools, exercises assigned to reinforce the theory and tools, and a

term project involving practical experience on development of a real e-business system.

Elective Courses

Management Courses

Each year a selection of elective courses will be offered from the list below:

GCEB 632 **Management Control in the e-Business Environment** (3 credits)

GCEB 634 **e-Business Supply Chain** (3 credits)

GCEB 636 **Intelligent Applications for e-Business** (3 credits)

Technology Courses

Each year a selection of elective courses will be offered from the list below:

GCEB 644 **Network and Communication Infrastructure** (3 credits)

GCEB 646 **e-Business Systems Implementation** (3 credits)
Prerequisite: GCEB 620
Note: Students who have taken GCEB 642 may not receive credit for this course.

Seminars

GCEB 695 **Special Topics in e-Business** (3 credits)

SCHOOL OF GRADUATE STUDIES

Dean of Graduate Studies
ELIZABETH SACCÀ

Associate Dean, Student and External Affairs
MONICA MULRENNAN

Associate Dean, Curriculum and Appraisals
TED STATHOPOULOS

Mission Statement

The School of Graduate Studies provides leadership and support to the university community in its quest for the advancement of knowledge and academic achievement. It promotes creative initiatives in scholarly research, artistic expression, teaching and training. The School fosters an inclusive, pluralistic perspective and it upholds high standards across all graduate programs at Concordia. In its pursuit of excellence, the School advocates an open and flexible approach to graduate education.

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website: http://humanities.concordia.ca/

Humanities

Interdisciplinary Studies in Society and Culture

Faculty

Program Director: Catherine Russell (Cinema); ***Professors:*** Homa Hoodfar (Sociology & Anthropology), Greg Nielsen (Sociology & Anthropology), Daniel Salée (School of Community and Public Affairs), Sherry Simon (Études françaises); ***Associate Professors:*** Bina Freiwald (English); ***Assistant Professors:*** Matthias Fritsch, (Philosophy), Andrew Ivaska (History), Csaba Nikolenyi (Political Science), Johanne Sloan (Art History), Rhona Richman-Kenneally (Design & Computation Arts), Matthew Soar (Communication Studies); ***Additional Faculty:*** a variety of faculty members representing many disciplines from the Faculty of Arts and Science and the Faculty of Fine Arts. The Humanities Doctoral Committee has two student representatives.

Doctor of/Doctorate in Philosophy (Humanities)

This program makes it possible for highly qualified students to engage in interdisciplinary study at the doctoral level. Students in the program declare one major field, normally within the discipline of the student's master's degree, and two minor fields/disciplines. The major field *must* be from a humanities, social science or fine arts discipline. Minor fields normally are chosen from the humanities, social sciences or fine arts, but may also involve disciplines such as mathematics or the life sciences.

Program Objectives

This program's aims are: to provide qualified individuals with the opportunity to pursue academic interests and competence in more than one academic discipline; to develop intellectual skills which will produce scholars capable of teaching and conducting quality research; to encourage the discovery of shared research interests among students and faculty in various disciplines; and to encourage interdisciplinary teaching and research which provides an essential complement to traditional disciplines.

Admission Requirements. The normal requirement is a master's degree with high standing from a recognized university. The Humanities Doctoral Committee will scrutinize the applicant's academic background and probable course of study in order to determine whether a) the applicant's interests are

truly interdisciplinary, b) they fall within the scope of the available faculty and facilities at Concordia, and c) the student's record indicates that they are likely to be able to cope with a demanding program involving the practice of more than one academic discipline.

Application Deadline. A detailed description of the program can be obtained from the Ph.D. Humanities Program. The deadline for application is March 1 for the Fall term and October 1 for the Winter term. Applicants can apply online at: http://welcome.concordia.ca/.

Requirements for the Degree

1. **Fields of Study.** Students in the Humanities Doctoral Program are expected to pursue a pattern of independent study and research under the direction and supervision of scholars in three fields, one of which shall be chosen as the student's major field. (A "field" is defined as a recognizable and coherent segment of a discipline, e.g., Victorian literature as a field within the discipline of English literature, German history 1870-1945 as a field within the discipline of History, or Sociology of knowledge as a field within the discipline of Sociology. In some cases a "field" may be itself interdisciplinary or non-disciplinary as, for example, hermeneutics or meta-science.) The Humanities Doctoral Committee will define and approve fields of study to ensure that a) the candidate's total program is sufficiently intensive and inclusive, b) competent faculty are available to direct it, and c) the student's special interests are recognized.

2. **Supervisory Committee.** Prior to admission into the program, students form a supervisory committee of three faculty members. In consultation with the student, the committee determines the student's program of study.

3. **Credits.** A fully-qualified candidate is required to complete a minimum of 90 credits. These are apportioned as follows: minimum course requirements, 24 credits; comprehensive examinations, 12 credits; thesis, 54 credits.

4. **Residence.** The minimum residence requirement is two years (6 terms) of full-time study, or the equivalent in part-time study.

5. **Courses.** Candidates are required to take two 3-credit compulsory core seminars in their first year, Humanities 888 (Methodology) and Humanities 889 (Thematic). The remaining course credits (18 minimum) normally will consist of 3-credit or 6-credit tutorials, but may also involve regularly scheduled graduate courses that are deemed relevant to the student's program of research. These are designated Humanities 800: Directed Studies at an advanced level, and by successive numbers in the 800-sequence to identify sections taken with different professors during any one year. Six credit courses will run in the sequence 800 to 829, and 3-credit courses in the

sequence 830 to 884. Each program of directed studies will be determined by the student's advisory committee, in accordance with the needs of the student and the available faculty resources.

6. **Cognate Courses.** A candidate may be required to enroll in existing graduate courses offered in other programs in addition to those formally required for the Ph.D. Humanities degree, if, in the opinion of the student's advisory committee, the chosen field of study demands it.

7. **Comprehensive Examinations (Humanities 885).** Before admission to candidacy for the degree, students must pass three comprehensive field examinations and an oral examination of the student's written thesis proposal. The three comprehensive field examinations must be written during the term immediately following the completion of the 24 (minimum) course credits. The oral examination of the written thesis proposal must take place not later than the term following the writing of the comprehensive field examinations.

8. **Thesis (Humanities 890).** Students who have passed the comprehensive examinations will be admitted to candidacy for the Ph.D. upon acceptance by the committee of the proposed thesis topic and research plan. A doctoral thesis should be based on extensive research in primary sources, make an original contribution to knowledge, and be presented in acceptable literary form.

9. **Language Requirement.** Doctoral candidates are required to demonstrate an ability to read and translate scholarly material in at least one language (other than the candidate's first language) relevant to their studies.

Academic Regulations

1. **GPA Requirement.** The academic progress of students is monitored on an annual basis. To be permitted to continue in the program, students must obtain a cumulative grade point average (GPA) of 3.00 based on a minimum of 12 credits. Students whose GPA falls below 3.00 are considered to be on academic probation during the following review period. Students whose GPA falls below 3.00 for two consecutive review periods are withdrawn from the program.

2. **C Rule.** Students who obtain a grade of C in a course are required to repeat the course or take another course. Students receiving more than one C grade will be withdrawn from the program.

3. **F Rule.** Students who receive a failing grade in the course of their Ph.D. Studies will be withdrawn from the program. Students may apply for

readmission. Students who receive another failing grade after re-admission will be withdrawn from the program.

4. **Time Limit.** All work for a doctoral degree must be completed before or during the calendar year, 18 terms (6 years) of full-time study or 24 terms (8 years) of part-time study from the time or original registration in the program.

5. **Graduation Requirement.** In order to graduate, students must have a cumulative GPA of at least 3.00.

Required Courses

HUMA 888 Seminar in Interdisciplinary Studies I (3 credits)
A one-term seminar attended by all students admitted to the program for that academic year. This course is an introduction to the methodology of interdisciplinary studies. Its aim is to enhance reflective awareness of the role of paradigms and disciplinary boundaries in shaping and directing inquiries, drawing upon the contributions of such fields as post-Kuhnian philosophy of science, feminist studies and cultural studies. The course should sensitize students to historical changes in the way intellectual inquiry is conceptualized and carried out.

HUMA 889 Seminar in Interdisciplinary Studies II (3 credits)
A one-term seminar attended by all students admitted to the program for that academic year. The aim of this course is to explore how a theme of common interest (e.g., power, citizenship, identity, violence, creativity) is problematized in different disciplines. The course will introduce students to the work of major thinkers whose work challenges disciplinary boundaries.

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Special Individualized Programs

Faculty

SIP Subcommittee: ***Professors:*** Nina Howe (Director), Norman Segalowitz (Psychology), Marie-France Wagner (Études françaises); ***Associate Professors*****:** Ingrid Bachmann (Studio Arts), Lori Beaman (Sociology and Anthropology), Alie Cleghorn (Education), Trevor Gould (Studio Arts), Margie Mendell (School of Community and Public Affairs), Elaine Paterson (Art History), Charles Reiss (Classics, Modern Languages and Linguistics). All faculty members participating in Special Individualized Programs.

Program Objectives

The University offers individualized graduate programs under the general direction of the Dean of Graduate Studies that provide the possibility for research and graduate studies at both the master's and doctoral levels in areas not covered by existing graduate programs.

The Special Individualized Programs (SIP) have been established by the School of Graduate Studies so that a limited number of exceptionally capable students with specific goals may be admitted to individualized programs of graduate study and research. The SIP encourages students to pursue innovative studies that cross more than one recognized field. In some circumstances, students may be permitted to pursue studies within a single discipline, when no graduate program in this discipline exists within our University.

Admissions

Only outstanding applicants will be considered. Interested candidates should immediately consult the guidelines for the Special Individualized Programs (SIP) to determine fields of study, potential supervisory committee members and other application procedures. Applicants should take note that entry to this program requires a clearly formulated program of study and the identification of a proposed supervisory committee as part of the application. (Doctoral applicants interested in pursuing a degree in inter-disciplinary studies in the areas of Interdisciplinary Studies in Society and Culture should apply to the Humanities Doctoral Program).

The SIP Admissions Subcommittee reviews all application material submitted by the applicant.

Application Deadlines. The deadline for applications is January 15 for September or January entry for the following academic year.

Program Requirements

The Special Individualized Programs exist to promote innovative and creative approaches to issues that are outside the normal boundaries of investigation of existing graduate programs. Students are engaged in individualized research initiatives supported by an integrated program of study drawing on the various resources available at the University both within a Faculty or across Faculties. In most cases, individuals applying to a SIP must propose a program of study involving multidisciplinary scholarship on problems that are not normally the province of disciplines represented by departments in this University. These applicants propose a supervisory committee involving faculty from at least two different departments/units. However, a limited number of students may be admitted who propose programs within a single discipline and involving faculty from only one department/unit. In all cases, applicants include a proposed supervisory committee, courses, and research plan.

Candidates admitted to a SIP are required to conform to School of Graduate Studies regulations for graduate students.

Admission Requirements. Candidates for the Ph.D. must have completed a master's degree or its equivalent in a relevant disciplinary area. Candidates for the master's must have completed a bachelor's degree with high academic standing in a relevant disciplinary area or its equivalent.

Credits. Doctoral candidates are required to complete a minimum of 90 credits apportioned as follows: coursework, 24 credits; thesis proposal and doctoral thesis, 66 credits. Master's candidates are required to complete a minimum of 45 credits apportioned as follows: coursework, 24 credits, thesis proposal and master's thesis, 21 credits. Both degrees also require the student to take a comprehensive examination. For students engaged in interdisciplinary studies, both degrees normally require at least nine credits in regularly scheduled graduate courses, including the Research Seminar.

Residence. For the doctoral degree, the minimum period of residence is 24 months of full-time study, or its equivalent in part-time study. For the master's degree, the minimum period of residence is 12 months of full-time study, or its equivalent in part-time study.

C Rule. Students are allowed no more than one C grade while registered in a SIP. Students who receive more than one C grade will be withdrawn from the program.

F Rule. Students who receive an F grade will be withdrawn from the program.

Graduation Requirement. In order to graduate, students must have a cumulative GPA of at least 3.00.

Courses

For students engaged in interdisciplinary studies, candidates are normally required to take one 3 credit research seminar in their first or second year, plus a minimum of 6 other credits in regularly scheduled graduate courses. Please note that special permission from the departments in question (Chair and Graduate Program Director) is necessary in order to have access to these courses. SIP courses are designated SPEC with successive numbers in the 600 sequence for master's students and in the 800 sequence for doctoral students.

SPEC 670 Research Seminar (3 credits)
This seminar introduces master's students to methodological issues relevant to interdisciplinary research. It will include an examination of different research traditions, paradigms, their similarities and differences, and implications for integrating approaches.

Special 600-619 Special Master's Level Studies (6 credits)
Special 620-639 Special Master's Level Studies (3 credits)
Special 640-684 Special Master's Level Studies (variable credits)
Special 685 Master's Comprehensive Examination (non-credit)
Special 690 Master's Thesis (21 credits)

SPEC 870 Research Seminar (3 credits)
This seminar introduces doctoral students to methodological issues relevant to interdisciplinary research. It will include an examination of different research traditions, paradigms, their similarities and differences, and implications for integrating approaches.

Special 800-819 Special Doctoral Level Studies (6 credits)
Special 820-839 Special Doctoral Level Studies (3 credits)
Special 840-884 Special Doctoral Level Studies (variable credits)
Special 885 Doctoral Comprehensive Examination (non-credit)
Special 890 Doctoral Thesis (66 credits)

Comprehensive Examination

At both the master's and doctoral levels, students are required to write an examination testing their basic knowledge of the relevant areas of each component discipline comprising their program of study. The supervisory committee supplies the student with an appropriate reading list to prepare for this examination.

At the doctoral level, students are additionally required to write a Doctoral Comprehensive Examination Essay (5000-6000 words) that integrates the

component disciplines of the program of study in addressing a particular issue. The student makes a formal essay topic proposal to the supervisory committee which decides with the student boundaries and expectations for the essay. The student is then given three weeks to submit the essay. This essay must not be so closely related to the student's area of research as to be a potential chapter of the thesis.

The supervisory committee evaluates these examinations; it may, however, consult with other faculty members in relevant areas where additional expertise is required for the evaluation. The principal supervisor submits the reading list, the questions, the answers/essay, and the evaluations along with the pass/fail grade to the SIP Director.

Thesis

A SIP thesis represents a unique contribution to scholarship undertaken while the student is enrolled in the program. The master's and doctoral theses offered at this University in cognate areas will normally provide an appropriate guide to the format and scope of SIP thesis requirements.

In the case of a nontraditional thesis - such as one involving a creative production - the requirement of scholarly contribution still applies. Thus, while a thesis may present a creative work as its central focus, it should nevertheless provide a scholarly discussion placing that work in the context of related ideas and works. As in the case of traditional theses, the nontraditional thesis is submitted to an oral examination where it is exposed to scholarly criticism and where the student is given an opportunity to defend it.

The thesis defense must provide for the inclusion of one external examiner at the master's level, and two external examiners at the doctoral level.

Policy on the Establishment of Tribunal Hearing Pools

General

1. This policy deals with the establishment of tribunal hearing pools for hearings, both first-level hearings as well as appeal hearings, provided for in the Code of Rights and Responsibilities, the Code of Conduct (Academic), the Academic Re-evaluation Procedures, the Graduate Academic Hearing Procedures and any other codes or policies which may be adopted that refer to the Tribunal Hearing Pools provided for under this policy.

2. In the event that a hearing or appeal panel cannot be convened from the membership of the Student Hearing Pool or Faculty Hearing Pool, as outlined below, the Secretary-General shall designate the membership of the relevant hearing or appeal panel for a given case.

Student Tribunal Pool

3. In June of each year, the Concordia Student Union Inc. shall be asked to nominate up to a maximum of twelve (12) undergraduate students and the Graduate Student Association shall be asked to nominate up to a maximum of (6) graduate students to form the Student Tribunal Pool (STP).

4. In order to be eligible, students shall be registered in an undergraduate or graduate program and be in good standing. Students who are in failed standing, in conditional standing or on academic probation or who have been sanctioned either under the Code of Rights and Responsibilities or the Code of Conduct (Academic) within the three (3) years previous to their nomination are not eligible.

   The status and standing of student nominees shall be confirmed by the University Registrar in September prior to the submission of the list of nominees for approval to Senate by the Secretary of Senate. In addition, the status and standing of members of the STP shall be confirmed by the University Registrar each September for as long as the member remains in office.

5. The term of office of members of the STP shall be for (2) years, from September 1 to August 31, renewable for a total maximum term of four (4) years. Members remain in office until replaced.

Faculty Tribunal Pool

6. The Council of the Faculty of Arts and Science shall nominate six (6) faculty members, the Council of the John Molson School of Business and the Council of the Faculty of Engineering and Computer Science shall nominate five (5) faculty members each, and the Council of the Faculty of Fine Arts and the Council of the School of Graduate Studies shall nominate three (3) faculty members each, for a total of twenty-two (22) faculty members, to comprise the Faculty Tribunal Pool (FTP).

7. The term of office of members of the FTP shall be for two years, from September 1 to August 31, renewable for a total maximum term of four (4) years. Members remain in office until replaced.

8. The Secretary of each Faculty Council and the Council of the School of Graduate Studies shall forward a list of nominees to the Secretary of Senate prior to its September meeting for approval.

Administrative and Support Staff Tribunal Pool

9. The Administrative and Support Staff Tribunal Pool (AaSSTP) shall be comprised of five (5) members nominated in accordance with the Electoral College Policy.

   Administrative and support staff members from the University Secretariat, the Ombuds Office and the Office of Rights and Responsibilities shall not be eligible for membership on the AaSSTP.

10. The term of office of members of the AaSSTP shall be for two years, from September 1 to August 31, renewable for a total maximum term of four (4) years. Members remain in office until replaced.

11. The Executive Director of Human Resources and Employee Relations shall forward a list of nominees to the Secretary of the Board of Governors prior to its September meeting for approval.

Chairs

12. In addition to the members of the STP and FTP appointed by Senate, and the members of the AaSSTP appointed by the Board, Senate shall appoint up to a maximum of fifteen (15) individuals to serve as non-voting Chairs of the various tribunal panels dealt with under this policy.

13. The role of the Chairs shall be to preside over the various tribunal panels, keep order and ensure fairness. The Chairs shall, as well,

preside over the deliberations of the various tribunal panels but shall not vote.

14. Because the role of the Chairs of the various tribunal panels requires impartiality and particular skills which take time to develop and cannot easily be acquired by lay persons during a brief term of office, the Chairs shall normally be selected from qualified alumni or emeriti who have training in law or tribunal procedures as well as some knowledge of the University environment.

15. The term of office for Chairs shall be for two years, from September 1 to August 31, renewable with no maximum term.

16. The candidates for the Chairs shall be recommended to Senate by the University General Counsel in consultation with the secretaries of the tribunal panels dealt with under this policy. Curriculum vitae of the candidates shall accompany the recommendation.

Training

17. All members of the STP, FTP and AaSSTP shall receive training, prepared and conducted jointly by the secretaries of the tribunal panels dealt with under this policy, the Director of Advocacy and Support Services and the University General Counsel. Separate training shall be held for the Chairs.

Academic Re-evaluation Procedures

I General

1. Concordia University affirms the right of students to request the re-evaluation of coursework which includes tests, examinations, essays and other work that has contributed to the grading of a course. It is assumed that initiating a formal re-evaluation ("a re-evaluation request") is a last recourse, taken when prior and sincere attempts to resolve problems and disagreements informally and directly have failed.

2. Students have the right to see their coursework. Students are responsible for the preservation of any material, in its entire and original form, which has been returned to them. A re-evaluation request may be refused if this material is not available.

3. Instructors are responsible for the preservation of coursework that has not been returned to students as follows: until December 31 of the next calendar year for Fall term courses; until April 30 of the next calendar year for Fall/Winter and Winter term courses; and until August 31 of the next calendar year for Summer term courses.

4. In cases where grades are received for activities other than written or artistic coursework, such as class participation, oral presentations, oral examinations and performance, no re-evaluation is normally possible. However, every attempt shall be made by the instructor concerned and the Chair of the Department to address the concerns raised by the student.

5. The grounds for a re-evaluation request are restricted to claims that i) a miscalculation of the grade occurred; or ii) the evaluation of the work was demonstrably unfair.

6. A grade may be maintained, raised or lowered as a result of a re-evaluation request.

II Procedure

7. Students who are dissatisfied with the grade received on one or more pieces of coursework shall first attempt to meet with the instructor and explain their position. If the student remains dissatisfied or is unable to meet with the instructor, he or she may, upon receiving the final grade for the course, make a re-evaluation request.

8. A re-evaluation request shall be made on an "Academic Re-evaluation Request" form available at the Birks Student Service Centre. The student

shall specify the reasons for seeking the re-evaluation and shall indicate what informal attempts towards re-evaluation have been made. A processing fee must accompany the request. (See the Tuition and Fees section of the Calendar for the current fee).

9. A re-evaluation request with respect to a Fall term course must be made no later than the following February 1; with respect to a Fall/Winter or Winter term course, no later than the following June 15 and with respect to a Summer term course, no later than the following October 1. These deadlines may be extended by the Registrar in particular cases if the student can provide evidence that he or she was unable to have acted within the deadlines.

10. The Registrar shall forward the re-evaluation request to the Chair of the appropriate Department.

11. The Chair shall decide whether the re-evaluation request conforms to the criteria outlined in articles 4 and 5 above within ten (10) days of receiving the re-evaluation request.

12. If the Chair decides that the re-evaluation request does not conform to the criteria outlined in articles 4 and 5 above, he or she shall communicate this decision with reasons, in writing, to the student with a copy to the Registrar. Should the student disagree with this decision, he or she has the right to appeal the Chair's decision to Re-evaluation Appeals Panel as set out in article 25 below.

13. Requests for review or other consideration which do not conform to the grounds for a re-evaluation request may fall under the purview of the Chair, the Dean, the Student Request Committee or other mechanisms.

14. If the Chair decides that the re-evaluation request conforms to the criteria outlined in articles 4 and 5 above, he or she shall appoint a re-evaluator whose name shall be communicated to the student and to the instructor concerned. Normally, the re-evaluator shall not be an instructor in whose course the student is registered at that time.

15. Before the re-evaluation begins, the instructor shall provide the Chair with information regarding the nature and structure of the course as well as the evaluation criteria and methods used. The Chair shall communicate this information to the re-evaluator.

16. The entire piece of work identified by the student shall be re-evaluated. The re-evaluator may request additional input from the student or the instructor.

17. The re-evaluation shall normally be completed within thirty (30) days of the Chair's decision that the re-evaluation shall proceed. If it becomes clear that the thirty (30) day delay cannot be met, the Chair shall immediately communicate this information to the student in order to determine whether any serious difficulties may arise from extending the delay.

    In the case where the thirty (30) day delay is extended, every effort shall be made to remedy any academic disadvantage that the student may experience as a consequence of the extension of the delay.

18. Upon completion of the re-evaluation, the re-evaluator shall assign a grade to the work in question and shall forward the re-evaluated material to the Chair along with a reasoned report. The reasoned report shall make mention of the documentation and methodology used.

    The Chair shall communicate the re-evaluation decision, in writing, along with the reasoned report, to the student, the instructor and the Registrar as well as whether the final grade for the course will be modified as a result of the re-evaluation decision.

19. In cases where there is a significant discrepancy between the original grade assigned and the grade assigned by the re-evaluator, the Chair may convene a meeting with the instructor and the re-evaluator in order to discuss the issue before communicating the decision to the parties concerned. If disagreement as to the discrepancy remains after the meeting, the re-evaluator's grade shall stand.

20. In cases where the re-evaluation decision reveals a generalized flaw in the original evaluation process, the Chair shall take appropriate steps to ensure that the grades of other students in the course are reviewed and modified if appropriate.

21. A final grade that is modified as a result of the re-evaluation shall be entered onto the student's academic record and transcript. If no appeal is filed, the modified grade shall permanently replace the original grade on the student's academic record and transcript. If an appeal is filed, an interim notation to the effect that the grade is "under appeal" shall accompany the grade until the final disposition of the case.

III Appeals

22. A permanent Secretary of the Re-evaluation Appeals Panel ("RAP") (the Secretary) shall be appointed by the Secretary-General. The Secretary shall be responsible for the administrative functioning of the RAP and shall maintain the confidential files of the RAP.

23. A RAP of three (3) members, as well as a non-voting Chair, shall be selected by the Secretary for a given appeal. The RAP shall be composed of two (2) faculty members drawn from the Faculty Tribunal Pool and one (1) student drawn from the Student Tribunal Pool as provided for under the Policy for the Establishment of Tribunal Hearing Pools. Every attempt will be made to select the student member from the student's constituency (undergraduate or graduate status).

24. A student or instructor may appeal a re-evaluation decision based on either substantive grounds or on the presence of serious and prejudicial procedural defects. In the case of an appeal from an instructor, "prejudicial" shall be limited to the effect that the alleged procedural defect has on other students in the course or on the academic standards of the University. The appeal must state in clear and precise terms the grounds on which the appeal is based. Such an appeal must be made, in writing, to the Secretary within fifteen (15) days after the date of transmission of the re-evaluation decision.

25. A student may appeal a Chair's decision that the re-evaluation request did not conform to the criteria outlined in articles 4 and 5 above. This appeal may be based on either substantive grounds or on the presence of serious and prejudicial procedural defects in the Chair's consideration of the re-evaluation request. The appeal must state in clear and precise terms the grounds on which the appeal is based. Such an appeal must be made, in writing, to the Secretary within fifteen (15) days after the date of transmission of the Chair's decision.

26. Upon receipt of an appeal from a student, the Secretary shall send a copy to the Registrar, the Chair, the instructor and the re-evaluator, if appropriate, soliciting their input within ten (10) days. Any input received within the ten (10) day period shall be forwarded to all parties soliciting their comments on the input within a further ten (10) days. All input and comments received within the twenty (20) day period shall form part of the dossier submitted to the RAP.

    Upon receipt of an appeal from an instructor, the Secretary shall send a copy to the Registrar, the Chair, the student and the re-evaluator, if appropriate, soliciting their input within ten (10) days. Any input received within the ten (10) day period shall be forwarded to all parties soliciting their comments on the input within a further ten (10) days. All input and comments received within the twenty (20) day period shall form part of the dossier submitted to the RAP.

27. The RAP shall render a decision, based on the written record only, normally within thirty (30) days of the filing of an appeal. The RAP shall meet at least once in person before rendering its reasoned decision.

28. In the case of an appeal of a re-evaluation decision, should the RAP determine that serious and prejudicial procedural defects were present in the re-evaluation process or that there are substantive grounds necessitating a new re-evaluation, it shall instruct the Chair to arrange for a new re-evaluation.

29. Should the RAP decide that an appeal be upheld in the case of an appeal of a Chair's decision that the re-evaluation request did not conform to the criteria outlined in articles 4 and 5 above, it shall instruct the Dean to arrange for a re-evaluation independent of the relevant Chair.

30. The RAP shall communicate its signed, dated and reasoned decision to the student, the instructor, the re-evaluator (if appropriate), the Chair and the Registrar and shall include copies of all documentation considered.

31. The decision of the RAP is final.

IV Miscellaneous Provisions

32. The word "days" is defined as working days which excludes weekends, holidays and other days during which the University is closed.

    In the calculation of any delay set out in these procedures, the months of July and August shall not be taken into account. In the case of an appeal submitted to the RAP before July 1, the regular delays set out in these procedures shall apply.

33. Any written notice addressed to a student pursuant to Section III – Appeals under these procedures shall be sent by courier to the last address provided by the student to the University and shall be deemed to be perceived one (1) day after delivery.

34. If the course in question was taught by the Chair, the Dean shall assume all of the duties imposed on the Chair in these procedures. If the course in question does not form part of a department, the re-evaluation request shall be forwarded to the appropriate administrator responsible for the course.

35. The overall responsibility for the implementation and recommended amendments to these procedures shall rest with the Provost.

Adopted by Senate on May 29, 1998 and amended by Senate on May 19, 2000 and September 14, 2001.

Code of Conduct (Academic)

Note: The Code of Conduct (Academic) is under review at time of printing. For the current version, please consult the web at:
http://web2.concordia.ca/Legal_Counsel/policies/english/AC/Code.html

I Preamble

Introduction

1. The integrity of University academic life and of the degrees, diplomas and certificates the University confers is dependent upon the honesty and soundness of the instructor-student learning relationship and, in particular, that of the evaluation process. As such, all students are expected to be honest in all of their academic endeavours and relationships with the University.

Jurisdiction

2. For the purposes of this Code, the student need only have been a student at the time of the alleged offence.

3. If, prior to the initiation of any proceedings under this Code, the student has graduated, the proceedings shall continue.

Ambiguity

4. Wherever there is doubt or ambiguity regarding any provision of this Code or the procedure to be followed, that interpretation or procedure which appears to be most equitable and consistent with the general purposes and philosophy of this Code shall be adopted. Except for those terms specifically defined in this Code, the terms used shall have their usual meanings.

II Definitions

Student

5. Student is defined as:
   a. any person registered in the University whether for courses or research and whether or not a candidate for a degree, diploma or certificate;
   b. persons once registered in the University who are under suspension from the University;
   c. persons registered during a preceding academic term.

Days

6. Days is defined as working days, which excludes weekends, holidays, and other days during which the University is closed.

Dean

7. Dean is defined as:
   a. the Dean of the Faculty offering the program in which the student is registered; or
   b. if the student is not registered in a program, the Dean of the Faculty providing the course concerned or in the event that the offence is not related to a particular course, the Dean of the Faculty providing the most credits on the student's record; or
   c. if the student is a graduate student, the Dean of Graduate Studies.

   The Dean may delegate an Associate or Vice-Dean to fulfill any of his or her obligations under this Code. If the course concerned is taught by the Dean, the Provost shall assume all of the duties imposed on the Dean in this Code.

Invigilator

8. Invigilator means an instructor or any other person who is charged with supervising an evaluative exercise.

Examination

9. Examination means any evaluative exercise including tests, quizzes and like assignments as well as site supervised examinations and non-site supervised examinations as outlined in articles 18 and 19 of this Code.

III Offences

10. Any form of cheating, plagiarism, personation, falsification of a document as well as any other form of dishonest behaviour related to the obtention of academic gain or the avoidance of evaluative exercises committed by a student is an academic offence under this Code.

11. Any attempt at or participation related in any way to an academic offence is also an offence under this Code and shall be dealt with in accordance with the procedures set out in this Code.

12. Without limiting the generality of article 10 above, academic offences include, but are not restricted to, the carrying out or attempting to carry out or participating in:

a. personation - assuming the identity of another person or having another person assume one's own identity;

b. plagiarism - the presentation of the work of another person as one's own or without proper acknowledgement;

c. the contribution by one student to another student of work with the knowledge that the latter may submit the work in part or in whole as his or her own;

d. multiple submission - the submission of a piece of work for evaluative purposes when that work has been or is currently being submitted for evaluative purposes in another course at the University or in another teaching institution without the knowledge and permission of the instructor or instructors involved;

e. the obtention by theft or any other means of the questions or answers of an examination or of any other University-related resource that one is not authorized to possess;

f. the possession or use during an examination of any non-authorized documents or materials or possessing a device allowing access to or use of any non-authorized documents or materials;

g. the use of another person's examination during an examination;

h. communication with anyone other than an invigilator during an examination or the obtention of any non-authorized assistance during an examination;

i. tearing or mutilating an examination booklet, inserting pages into a booklet or taking a booklet from the examination room;

j. the falsification of a document, in particular a document transmitted to the University or a document of the University, whether transmitted or not to a third party, whatever the circumstances;

k. the falsification of a fact or research data in a work including a reference to a source, which has been fabricated. Falsification shall not include those factors intrinsic to the process of academic research such as honest error, conflicting data or differences in interpretation or judgment of data or of experimental design.

IV Procedures

Provisions Governing Examinations

13. It is the duty of an invigilator to take action under the following articles when he or she becomes aware of any suspected academic offence.

14. Every examination paper shall expressly list the materials and equipment that a student is permitted to have and use during the examination and shall indicate any special conditions relating to the examination.

15. Except if expressly authorized by the invigilator, a student may not speak or otherwise communicate with any person other than an invigilator.

Centrally Supervised Examinations

16. Where an examination is supervised by the Office of the Registrar or where another central supervisory function is available to deal with allegations of offences related to examinations, a student who is suspected of an academic offence shall be so informed by the invigilator and shall be required to leave the examination area.

17. The student shall be requested, in a written statement, to choose one of the following options:
    a. to withdraw from the examination with the understanding that if the charge is dismissed, the student shall be permitted to take another examination for the same course at a mutually agreed upon time but no later than one calendar year from the date of the filing of the Incident Report;
    b. to continue the examination under controlled conditions in another location in which case the invigilator shall provide a fresh examination booklet and shall allow additional time for the examination to compensate for any time lost. The student shall continue the examination from the point at which he or she was required to leave the examination area.

18. Should the student not indicate a choice, he or she shall be considered to have chosen to withdraw from the examination. Until such time as the student has indicated that he or she has chosen to withdraw from the examination or is deemed to have done so, he or she remains under examination conditions.

19. The invigilator shall file an Incident Report with the Dean, as defined in article 7 of this Code, and shall include the student's examination booklet as well as any other evidence related to the suspected academic offence. The invigilator may not, on his or her own authority, impose a sanction on the student.

Other Examinations

20. Where an examination is not supervised by the Office of the Registrar or where another central supervisory function is not available to deal with allegations of offences related to examinations, a student who is suspected of an academic offence shall be so informed by the invigilator and shall be required to leave the examination area immediately. The invigilator shall file an Incident Report with the Dean, as defined in article 7 of this Code, and shall include the student's examination booklet as well as any other evidence related to the suspected academic offence. The invigilator may not, on his or her own authority, impose a sanction on the student.

Non-Examination Related Offences

21. An instructor who, in the course of grading a student's work or through any other means, has reasonable grounds to believe that a student in the instructor's course or working under his or her direction has committed a non-examination related offence shall complete a Code of Conduct (Academic) Incident Report ("Incident Report"). The instructor shall forward the Incident Report to the Dean as defined in article 7 of this Code. The instructor may not, on his or her own authority, impose a sanction on the student. Pending the final outcome of any proceedings under this Code, the instructor shall withhold the grade for the course, if applicable.

22. Any administrator of the University who to his or her personal knowledge or upon reliable report has reasonable grounds to believe that a student has committed a non-examination related offence shall complete an Incident Report. The administrator shall forward the Incident Report to the Dean, as defined in article 7 of this Code. The administrator may not, on his or her own authority, impose a sanction on the student.

Interviews

23. Upon receipt of an Incident Report, the Dean shall send a copy to the student, the Registrar and the Secretary of the Academic Hearing Panel and shall indicate whether he or she intends to interview the student to inquire into the alleged offence or whether the Incident

Report is being transmitted directly to an Academic Hearing Panel. The Dean shall, as well, include a copy of this Code.

24. Should the Dean decide to interview the student, the interview shall take place within fifteen (15) days of the Dean's receipt of the Incident Report. Whenever possible, five (5) days notice shall be given to the student before the interview. In convening the interview with the student, the Dean shall inform the student of his or her right to consult any person and to be accompanied or represented by a student advocate from Advocacy and Support Services or any other member of the University community.

25. At the outset of the interview, the Dean shall inform the student that he or she is not obliged to answer any of the Dean's questions and that any answers given may become the basis for an immediate disposition of the case under article 26 or cause the Dean to refer the case to an Academic Hearing Panel or be the subject of testimony by the Dean at any subsequent proceeding.

The standard of proof to be relied upon by the Dean shall be one of a "preponderance of evidence" as defined in article 40.

26. Within ten (10) days from the conclusion of the interview, the Dean shall write to the student indicating his or her decision to dismiss the charge or to impose one or more of the following sanctions:

a. Reprimand the student;
b. Direct that a piece of work be re-submitted;
c. Enter a failing grade for the piece of work in question or for the course, if applicable;
d. Enter a failing grade and ineligibility for a supplemental examination or any other evaluative exercise for the course;
e. Impose the obligation to take and pass courses of up to twenty-four (24) credits in addition to the total number of credits required for the student's program as specified by the Dean. If the student is registered as an Independent student, the sanction will be imposed only if he or she applies and is accepted into a program;
f. Impose specified community service at the University of up to ten (10) hours per week for a specified period of time;
g. Refer the case to an Academic Hearing Panel.

In the case of a student who has graduated, the only two available sanctions are i) a notation on the student's academic record that he or she has been found guilty of academic misconduct; or ii) a recommendation to Senate for the revocation of the degree obtained.

Where the Dean has decided to dismiss the charge, the Dean shall direct the instructor to submit a grade for the course in question, if applicable.

27. In the case of a sanction imposed by the Dean under article 26, the letter to the student shall inform him or her of the right to obtain a full hearing before an Academic Hearing Panel by notifying the Secretary of the Academic Hearing Panel (the Secretary) within ten (10) days after the date of transmission of the Dean's decision. A copy of the Dean's letter shall be sent to the Secretary, the Registrar and the instructor, if applicable.

When the Dean has decided to dismiss the charge against the student, a copy of the letter dismissing the charge shall be sent to the Secretary.

28. Where the Dean has imposed a sanction under article 26 and the student has not elected to obtain a full hearing under article 27, the Secretary shall, within a reasonable time, so notify the Dean and the Dean shall file a report with the Registrar containing the following:

a. identification of the student concerned;
b. a statement of the facts and findings;
c. a statement of the course of action taken;
d. a statement to the effect that the student concerned was notified in writing of the action taken and of his or her right to a full hearing before an Academic Hearing Panel. Such report shall form a part of the student's permanent file maintained by the Registrar.

29. When the student has elected to obtain a full hearing under article 27, the execution of any decision of the Dean shall be suspended pending disposition by an Academic Hearing Panel. In such cases, the imposition of the sanction of a failing grade shall not be taken into account when calculating the student's grade point average.

30. When the Dean has decided not to interview the student and to transmit the Incident Report directly to an Academic Hearing Panel such transmission shall take place within fifteen (15) days of receipt of the Incident Report.

Composition of the Academic Hearing Panels

31. A permanent Secretary of the Academic Hearing Panel (the Secretary) shall be appointed by the Secretary-General. The Secretary shall be responsible for the administrative functioning of the Academic Hearing Panel and shall maintain the confidential files and the recordings of the Academic Hearing Panel.

32. An Academic Hearing Panel ("AHP") of five (5) members, as well as a non-voting Chair, shall be selected by the Secretary for a given hearing. The AHP shall be composed of three (3) faculty members drawn from the Faculty Tribunal Pool and two (2) students drawn from the Student Tribunal Pool provided for under the Policy on the Establishment of Tribunal Hearing Pools. Every attempt will be made to select at least one (1) faculty member and one (1) student from the student's constituency (i.e. by faculty and undergraduate or graduate status).

Procedures Before an Academic Hearing Panel

33. Once a matter has been referred to the Secretary, he or she shall convene an AHP to hear the matter. Thereafter, the Secretary shall be responsible for all communications with the parties.

34. A hearing shall be convened as soon as possible after the receipt by the Secretary of the notification and normally within fifteen (15) days. The instructor, if applicable, shall be sent a copy of the notice of hearing. Once a hearing date is fixed by the Secretary, the parties shall submit any documentation they wish considered to the Secretary no later than ten (10) days before the scheduled hearing date. Such documentation shall include any supporting documents and a list of the witnesses, if any, that will appear. The Secretary shall transmit the documentation, together with a list of the Panel members selected for the case, to the parties no later than five (5) days before the scheduled hearing date.

35. Either party may object to the participation of a Panel member on the grounds of potential bias. A reasoned objection shall be filed with the Secretary who shall arrange for an alternate Panel member to serve if he or she determines that the objection is well-founded. If the Secretary feels that the objection is frivolous and the matter cannot be resolved, the issue shall be forwarded to the Chair of the AHP who shall render a final decision in this regard.

The Hearing

36. The AHP shall establish its own rules of procedure. Minimally, these rules shall provide for opening statements by the parties, evidence and witnesses called by the parties (expert or otherwise), the right of cross-examination, questioning by members of the AHP, representations with respect to desired sanctions and closing statements. Hearings shall be recorded and the cassettes kept as part of the permanent record of the proceedings for a period of not less than five (5) years.

37. The role of the Chair shall be to preside over the proceedings, keep order and ensure fairness. The Chair shall, as well, preside over the deliberations of the AHP but shall not vote. Decisions shall be by majority vote. The hearing shall be closed unless both parties have consented in writing to the attendance of members of the University community.

38. The instructor in the course in which the offence took place, if applicable, may be present throughout the hearing or may be called as a witness by either of the parties.

39. If the student fails, without reasonable excuse, to attend the hearing, the hearing may proceed in the student's absence or, at the Chair discretion the start of the hearing may be postponed. If the hearing proceeds in the student's absence, all rights contingent on the student's presence, with the exception of the right to have an advocate present to plead for postponement, are forfeited. In such a case, a student's right of appeal is limited to a consideration of the reasonableness of his or her excuse for not appearing. If an Appeals Panel finds that the excuse is reasonable, it shall order a new hearing by a new AHP with the student present. The decision of the new hearing with the student present is appealable as if it were a first hearing.

40. The decision of the AHP shall be signed, dated and reasoned. The standard of proof to be relied upon by the AHP shall be one of "a preponderance of evidence". A "preponderance of evidence" standard means that the individual alleging wrongdoing must establish that his or her version of the facts is significantly more probable. This standard is less rigorous than the standard of "beyond a reasonable doubt" required under criminal law.

Sanctions

41. Within ten (10) days from the conclusion of the hearing, the AHP shall write to the student and the Dean, with a copy to the Registrar and the instructor, if applicable, indicating its decision to dismiss the charge against the student or to impose one or more of the following sanctions:
    a. Reprimand the student;
    b. Direct that a piece of work be re-submitted;
    c. Enter a failing grade for the piece of work in question or for the course, if applicable;
    d. Enter a failing grade and ineligibility for a supplemental examination or any other evaluative exercise for the course;
    e. Impose the obligation to take and pass courses of up to twenty-four (24) credits in addition to the total number of credits required for the student's program as specified by the AHP. If

the student is registered as an Independent student, the sanction will be imposed only if he or she applies and is accepted into a program;

f. Impose specified community service at the University of up to ten (10) hours per week for a specified period of time;

g. Impose a suspension for a period not to exceed six (6) academic terms. Suspensions shall entail the withdrawal of all University privileges, including the right to enter and be upon University premises;

h. Expulsion from the University. Expulsion entails the permanent termination of all University privileges.

In the case of a student who has graduated, the only two available sanctions are i) a notation on the student's academic record that he or she has been found guilty of academic misconduct; or ii) a recommendation to Senate for the revocation of the degree obtained.

42. A sanction of suspension or expulsion is subject to confirmation by the Provost.

43. Any student found to have committed a second academic offence shall be expelled from the University subject to confirmation by the Provost.

44. The decision of the AHP shall inform the parties of their right to seek an appeal from an Appeals Panel within fifteen (15) days after the date of transmission of the AHP decision.

45. Where neither the Dean nor the student has sought an appeal from an Appeals Panel within the stipulated delay, the Secretary shall so inform the Registrar including a statement to the effect that the Dean and the student concerned were notified in writing of the action taken and of their right to seek an appeal from an Appeals Panel. Such report shall form a part of the student's permanent file maintained by the Registrar. This notification shall be sent to the Dean and the student, and the members of the AHP who presided at the hearing of the case.

46. The execution of any sanctions by an AHP shall be suspended until the expiry of the delay to seek an appeal or until the rendering of the decision by an Appeals Panel if an appeal is heard. In such cases, the imposition of the sanction of a failing grade shall not be taken into account when calculating the student's grade point average.

Appeals

47. An Appeals Panel of three (3) members, as well as a non-voting Chair, shall be selected by the Secretary for a given appeal. The Appeals

Panel shall be composed of two (2) faculty members drawn from the Faculty Tribunal Pool and one (1) student drawn from the Student Tribunal Pool. Every attempt will be made to select the student member from the student's constituency (undergraduate or graduate status).

48. Should either the student or the Dean wish to seek an appeal from a decision or sanction of an AHP, he or she shall apply in writing to the Secretary for the authorization to seek an appeal within fifteen (15) days after the date of transmission of the AHP decision. An Appeals Panel shall decide whether an appeal shall be heard having regard to the circumstances of each case.

49. Such request for authorization to appeal may be based only on the grounds of discovery of new evidence following the rendering of the decision of the AHP or on the presence of serious and prejudicial procedural defects. The request shall state in clear and precise terms the grounds on which the appeal is based. The Appeals Panel shall be provided with the complete file of the AHP and its decision shall be based on the written record only.

50. An Appeals Panel shall be convened as soon as possible after receipt of the authorization request by the Secretary and normally within fifteen (15) days. It shall normally render its decision with respect to the request within five (5) days of its consideration of the request.

51. If the authorization to appeal is granted, the appeal shall normally be heard within fifteen (15) days of the decision to authorize the appeal. Notification of such shall be sent to both parties.

52. The Appeals Panel has the authority to confirm, reverse or modify the decision being appealed. Further, should the appeal be based on the production of new evidence, the Appeals Panel may order a new hearing of the case by a new AHP.

53. The Appeals Panel shall normally render its decision within ten (10) days of the hearing. The decision of the Appeals Panel shall be signed, dated and reasoned and shall be sent to both parties, the Registrar, the instructor, if applicable, and the members of the AHP who presided at the hearing of the case.

54. The decision of the Appeals Panel shall be final.

55. In the case of the denial of an appeal where the sanction imposed by the AHP was suspension or expulsion, the suspension or expulsion shall

be retroactive to the date of the original decision by the AHP and shall take effect from the date of the Appeals Panel decision.

V Miscellaneous Provisions

Delays and Language

56. In the calculation of any delay set out in the Code, the months of July and August shall not be taken into account. In the case of a hearing before an AHP or an Appeals Panel that commenced before July 1, the regular delays set out in this Code shall apply.

57. Any party or witness participating in a hearing before an AHP or an Appeals Panel may make their presentation in either English or French.

Notices

58. Any written notice addressed to a student under this Code shall be sent by courier to the last address provided by the student to the University and shall be deemed to be received one (1) day after delivery.

Notations on Academic Record and Transcript

59. Sanctions of a failing grade in a course and more serious sanctions shall be reflected on the student's academic record with the additional notation of "for academic and disciplinary reasons".

60. Sanctions of a failing grade in a course, a failing grade in a course and further ineligibility for a supplemental examination and the obligation to take extra courses shall be reflected on the student's academic transcript without any additional notations.

61. Suspensions imposed under this Code shall be recorded on the academic transcript as follows: "Required to withdraw for academic and disciplinary reasons. May not resume studies until [date]". At the date for resumption of studies, the notation shall be removed from the transcript but shall continue to appear on the student's academic record.

62. Any expulsion imposed under this Code shall be recorded on the academic transcript as follows: "Required to withdraw for academic and disciplinary reasons. May not apply for re-admission."

63. In cases where a sanction has been imposed but a student has requested either a full hearing before an AHP or has sought an appeal from an Appeals Panel which has not been disposed of, the notation on the

record shall reflect the sanction but shall note that the sanction is "pending". In the case of a sanction of suspension or expulsion, the notation on the academic transcript shall note that the sanction is "pending".

64. No degree, diploma or certificate of the University shall be conferred or awarded from the time of the alleged offence until the final disposition of the charge.

65. Withdrawal by a student from a degree, diploma or certificate program or from a course shall not affect the filing of an Incident Report or any process provided for under this Code.

Records and Confidentiality

66. The Registrar shall maintain a record in the student's official file with respect to all sanctions imposed under this Code.

67. Such record shall be kept in strictest confidence and shall only be communicated to the student concerned and to other persons within the University having a legitimate interest or duty to take communication of them.

In the event that a charge is dismissed by the Dean, all information relating to the charge will be removed from the files held by the Faculty and the Registrar and will have no effect on a student's academic record or future academic activities. However, in accordance with the legislation governing the keeping of records, a record of the charge and its dismissal will be kept, in a confidential file by the Secretary and will be destroyed within the time-frame outlined by the University's archives retention rules.

68. Nothing contained in this section shall be interpreted as preventing the Registrar or any other University member from responding to a court order requiring the disclosure of information or statements obtained in the course of an interview or hearing conducted under this Code.

Annual Report

69. An annual report detailing the number of charges laid under this Code and their disposition shall be prepared by the Secretary and presented to Senate by September 30 of each year. The report shall be published in the University's newspaper. In no circumstances shall any mention be made of the names of the parties involved nor of any information, which might lead to their identification.

Overall Responsibility for Code

70. The overall responsibility for the implementation and recommended amendments to this Code shall rest with the Secretary-General. The Secretary-General shall transmit an information sheet to each Dean and Chair at the beginning of the Fall term each year outlining the general framework of this Code.

Adopted by Senate on May 30, 1997 and amended by Senate on May 29, 1998, September 14, 2001 and November 9, 2001.

Graduate Academic Appeals Procedures

General

1. Concordia University affirms the right of graduate students to appeal decisions which affect their standing in academic programs. It is assumed that initiating a formal appeal is a last recourse, taken when prior and sincere attempts to resolve problems and disagreements informally and directly have failed.

   Programs shall provide guidelines to deal with such matters within the program prior to their being handled by the formal procedures of the School of Graduate Studies. It is assumed that all such problems are best resolved proactively through deliberate and good-willed efforts on the part of students, instructors, Graduate Program Directors, Chairs and Faculty Deans.

2. Students are advised to contact the Associate Dean of Graduate Studies for Student Affairs for information concerning appeals.

3. The appeal procedure applies to all academic decisions based on stated criteria in course and program descriptions and in University, Faculty, and School of Graduate Studies regulations governing graduate education. In the case of courses offered by another University, the relevant procedures of that institution shall apply.

4. An appeal is a request to have an academic decision, action or set of actions changed. An appellant may seek to have an academic decision changed on the grounds that he or she has not been treated in a fair, equitable and impartial manner. Academic re-evaluations are dealt with separately in the Academic Re-evaluation Procedures.

5. The word day means a regular working day that the University is open.

6. The appeal procedure shall not apply to the process of application for entry to programs.

Graduate Appeal Committee

7. All appeals shall be considered by the Graduate Appeal Committee (GAC). This is a standing committee established by the Council of the School of Graduate Studies. It is composed of three faculty members and one graduate student. Faculty members shall be elected by the Council of the School of Graduate Studies for a period of two years and the student shall be elected by the Graduate Students' association for a period of one

year. There shall be elected alternates for each of these regular members. Alternate members replace any regular member who is unable to attend the full hearings of a particular case, who has had involvement in earlier stages of appeal or who might be deemed to be in manifest conflict of interest (e.g., a committee member who also happens to be the person whose action is being appealed). The Chair of the GAC shall be selected by, and from among, the GAC's membership.

8. The GAC may be called upon to consider allegations of unfairness with respect to an academic decision, action or set of actions. For example, such allegations may relate to actions of Graduate Program Directors, supervisors and supervisory committees; to information about student progress or to consideration of important extenuating circumstances.

9. It is the responsibility of appellants and respondents to compile and submit documentation and correspondence relevant to their case and to obtain the consent of any witnesses who may appear on their behalf. The GAC may call other witnesses as it deems appropriate.

Procedure

10. Appeals are made in writing to the Dean of Graduate Studies. The applicant must state the specific action being appealed, the grounds for the appeal, evidence in support of these grounds and the remedy sought. The applicant must also indicate what prior informal efforts have been made to secure the remedy.

11. The appeal will normally be lodged within fifteen days of the announcement of the decision being appealed from.

12. Upon receipt of the request for an appeal from the Dean of Graduate Studies, the GAC shall convene to decide whether or not there are grounds for hearing the appeal. If the request for an appeal hearing is denied, the Chair of the GAC shall submit a written reasoned report to the Dean who, in turn, shall notify the appellant, the respondent(s), the Chair of the Department and the Dean of the Faculty, and shall transmit copies of the report to them. If the GAC decides to hear the appeal, it shall inform the Dean to this effect.

13. The Dean of Graduate Studies shall give notice to the individuals involved in such appeals and shall provide respondents with a copy of all written materials submitted by appellants. Respondents shall indicate to the Dean of Graduate Studies their intention to appear at a hearing.

14. The hearing shall be held no later than twenty working days after the lodging of the appeal. A notice of fifteen days shall be given to appellants and the respondents. It is the responsibility of appellants and the respondents to notify witnesses of the time and place of the hearing.

15. The appellant and the respondent shall have the right to be present at the hearing of the appeal, to address the GAC and to present and cross-examine witnesses. Each of the parties may be accompanied by an advisor from the University community who shall have the right to speak. Witnesses shall be present only during their testimony. If neither of the parties deem it necessary to attend, the GAC shall deal with the case without them. This shall be noted in the GAC's report to the Dean.

16. In addition to the procedures set out in this policy, the GAC may establish its own procedures for the orderly functioning of the appeal. Such additional procedures shall be communicated to the appellant and respondent.

17. Following the hearing, the GAC shall deliberate in camera. Its decision shall be made by majority vote. The Chair shall only vote in case of a tie. The decision of the Graduate Appeal Committee is final.

18. If it upholds the appeal, the GAC shall determine the appropriate settlements and actions it deems necessary and shall pronounce itself within ten days.

19. It is the responsibility of the Chair of the GAC to forward a full and reasoned report to the Dean of Graduate Studies. The Dean shall then inform the appellant, respondent, the Chair of the Department and the Dean of the Faculty of the decision within ten days.

Code of Rights and Responsibilities

Mission Statement of Concordia University

Concordia is an urban university which is responsive to the needs of a diverse student population as well as to the bilingual and multicultural environment in which it resides. It is a welcoming community where values of equality, non-discrimination and tolerance of diversity are appreciated and actively promoted. Furthermore, Concordia is committed to responsible and innovative leadership in fulfilling the mission of universities to develop and disseminate knowledge and values and to act as a social critic. The University seeks to achieve this end by offering its students inclusive and accessible academic programs which stress a broad-based, interdisciplinary approach to learning, by fostering an environment of academic and pedagogical freedom, as well as by a dedication to superior teaching supported by the best possible research, scholarship, creative activity and service to society. Through these means, the University prepares its graduates, at all levels, to live as informed and responsibly critical citizens who are committed to learning and to the spirit of enquiry.

SECTION I STATEMENT OF PRINCIPLES

1. Rights

The Code of Rights and Responsibilities is to be applied in such a way as to respect the following basic principles:

1.1 All faculty members, administrative and support staff, members of the administration and students of Concordia University may reasonably expect to pursue their work and studies in a safe and civil environment; therefore neither Concordia University nor its faculty members nor its administrative and support staff nor the members of its administration nor its students shall condone any conduct which adversely affects the pursuit of works and studies in a safe and civil environment.

1.2 Everyone has the fundamental freedom of conscience and religion; freedom of thought, belief, opinion and expression; freedom of peaceful assembly and freedom of association; the whole subject to the limits recognized by law.

2. Academic Freedom

This Code is not to be applied in such a way as to detract from the right of faculty members, administrative and support staff, members of the administration and students to engage in the frank discussion of potentially controversial matters, such as race, sex, sexual orientation, gender identity, politics or religion. Furthermore, this Code shall not

be interpreted in such a way as to limit the use of legitimate instructional techniques, such as irony, argument, conjecture and refutation, or the assignment of readings, which may present a controversial point of view. This Code also recognizes the right to teach, within the bounds of the course calendar description and requirements of competency, and to conduct research and to engage in creative activity according to one's best judgment.

3. Responsibilities

All faculty members, administrative and support staff, members of the administration and students are expected to refrain from violating this Code. Members of the University who have supervisory authority over others bear a particular responsibility to act in a timely and effective manner when they become aware of any violation of this Code.

4. Assistance from the Office of Rights and Responsibilities

This Code establishes the Office of Rights and Responsibilities whose mandate is to assist Members of the University in resolving incidents involving an alleged violation of this Code in an effective and constructive manner. Such assistance is available both to individuals who believe that they have been subjected to conduct that violates this Code and to those with supervisory authority who are called upon to respond to incidents of such conduct. The operations of the Office of Rights and Responsibilities are directed by the Advisor, as set forth under Section IX.

5. Complaints Subject to a Range of Responses

In keeping with its desire to settle conflicts in an effective and constructive manner, the University and its faculty members, administrative and support staff, members of its administration and students shall endeavour to seek an appropriate response to any alleged violations of this Code, ranging from the use of alternate methods of conflict resolution to formal procedures for adjudicating complaints. If a violation of this Code has occurred, every attempt shall be made to use remedies and sanctions that restore harmony, collegiality and cooperation between Members of the University.

6. Fairness and Consistency

Complaints made under this Code shall be adjudicated in a manner that is consistent with the principles of natural justice and fair for all parties to the complaint, regardless of constituency. The principles of natural justice may be defined broadly as the right to be heard, the obligation to hear the other side and decisions made untainted of bias.

7. Management Rights

This Code is not to be applied in such a way as to detract from the right and duty of those with supervisory authority to manage and, if necessary, to discipline, faculty, administrative and support staff, members of the administration and students in accordance with collective agreements and University policies and procedures.

8. Union Rights

This Code is not to be applied in such a way as to detract from the rights of unions to defend the interests of their members and to exercise their rights under a collective agreement.

9. Recourse at Law

This Code does not detract from the right of Members of the University to seek recourse at law.

10. Code Does Not Supersede Other Policies or Agreements

Nothing in this Code shall replace or supersede any complaint, grievance or appeal procedure set out in any collective agreement to which Concordia University is a party, the Code of Conduct (Academic), the University Calendars or the Official University Policies.

11. Informing the Community

The Office of Rights and Responsibilities shall inform all Members of the University of the provisions of this Code and the services provided by the Advisor.

SECTION II INTERPRETATION

12. Definitions

In the present Code (and only for purposes of this Code), the following terms shall have the meanings specified in this Section II:

12.1 **"Advisor"** means the Advisor on Rights and Responsibilities as appointed by the President in accordance with Section IX of the present Code.

12.2 **"Appeals Panel"** means the Appeals Panel selected in accordance with sub-article 29.8 of the present Code.

12.3 **"Authority"** has the meaning ascribed thereto in sub-article 32.4.

12.4 **"Chair"** means the Chair of the Hearing Panel or the Appeals Panel, as the case may be.

12.5 **"Days"** means working days, which excludes weekends, holidays and other days during which the University is closed.

12.6 **"Disciplinary Officers"** has the meaning ascribed thereto in article 36.

12.7 **"Discrimination"** means treatment which:

a) has the effect or purpose of imposing burdens, obligations or disadvantages on Members or groups of Members; and

b) for which there is no bona fide and reasonable justification; and

c) when such treatment is based on one of the prohibited grounds specified in the Québec Charter of Human Rights and Freedoms, that is; race, colour, ethnic or national origin, sex, gender identity, pregnancy, sexual orientation, civil status, age, religion, political convictions, language, social condition, handicap or the use of a means to palliate a handicap.

12.8 **"Dismissal"** or **"to Dismiss"** from the University means the termination of all a person's rights and privileges as a student at the University (including the right to enter and be on University property) in respect of which no application for re-admission by the person will be entertained by the University until after a period of two (2) years from the dismissal, or such other lesser period as the President, the Acting-Rector or the Hearing Panel may determine. Dismissal shall be recorded on the academic transcript as follows: "Required to withdraw. May not apply for re-admission until (date)". At the date permitted for application for readmission the notation shall be removed from the transcript but shall continue to be maintained in the confidential files of the Dean of Students.

12.9 **"Expulsion"** or **"to Expel"** from the University means the termination of all a person's rights and privileges as a student at the University (including the right to enter and be on University property) in respect of which the University will not entertain any application from that person for re-admission. Expulsion shall be recorded in the academic transcript as follows: "Required to withdraw. May not apply for re-admission".

12.10 **"Harassment"** means:

a) unwelcome, vexatious conduct, directed towards a Member or group of Members; and

b) which may or may not be based upon one of the prohibited grounds specified in sub-article 12.7 c); and

c) when such conduct has the effect or purpose of unreasonably interfering with a Member's work or academic, athletic or artistic performance or of creating an intimidating or hostile environment for work or study.

12.11 **"Hearing Panel"** means the Hearing Panel selected in accordance with article 25 of the present Code.

12.12 **"Members"** or **"Members of the University"** means faculty members, administrative and support staff, members of the administration and students of Concordia University.

12.13 **"Offences against property"** means wilfully or recklessly taking, having unauthorized possession of, damaging or destroying any property belonging:

a) to the University; or

b) to any Member or group of Members when such property is on University premises or on other premises during the course of a University-sponsored activity or event.

12.14 **"Office of Rights and Responsibilities"** has the meaning ascribed thereto in article 4.

12.15 **"Protocol on the Co-ordination of Urgent Cases of Threatening or Violent Conduct"** means the Protocol attached hereto as Appendix A, as it may be amended from time to time by the Secretary-General.

12.16 **"Secretary"** means the Secretary of the Code of Rights and Responsibilities Hearing Panels or the Secretary of the Code of Rights and Responsibilities Appeals Panels, as the case may be, as appointed by the Secretary-General in accordance with article 24.

12.17 **"Secretary-General"** means the University's Secretary-General.

12.18 **"Security Department"** means the University's security department.

12.19 **"Sexual harassment"** means conduct of a sexual nature such as, but not limited to, sexual assault, verbal abuse or threats of a sexual nature, unwelcome sexual invitations or requests, demands for sexual favours or unwelcome and repeated innuendoes or taunting about a Member's body or appearance when:

a) submission to such conduct is made, whether explicitly or implicitly, a term or condition of a Member's employment or educational progress; or

b) submission to or rejection of such conduct is used as the basis for an employment or academic decision affecting that Member; or,

c) such conduct has the effect or purpose of unreasonably interfering with a Member's work or academic, athletic or artistic performance or of creating an intimidating or hostile environment for work or study.

12.20 **"Student"** means any person registered in an undergraduate or graduate degree or Certificate program of the University on a full-time or part-time basis; however such person is considered a "student" for purposes of this Code only during the period terminating upon the earlier of the following dates whereupon such person shall be deemed to be a visitor for purposes of this Code:

a) the date on which such person's degree or certificate is conferred;

b) three consecutive semesters after such person was last registered in at least one (1) course; or

c) the end of the semester during which such person is declared in failed status and is no longer entitled to register in any course at the University.

The term **"student"** also includes: (a) any person who is registered as an **"independent student"** at the University; however such person is deemed a **"student"** for purposes of this Code only during the semester in which the person is registered in at least one course at the University and during the immediately following semester whereupon such person shall be deemed to be a visitor for purposes of this Code; and (b) any person registered as a "student" at another university who has written approval from such person's home university to take courses at Concordia University; however such person shall be deemed a "student" only during the semester during which the person is registered in at least one course at the University, whereafter such person shall be deemed to be a visitor for purposes of this Code.

For purposes of the Code, the three semesters shall be the fall semester (from September 1 to December 31 inclusive), the winter semester (from January 1 to the last day of the winter semester exam period inclusive) and the summer semester (from the first day following the termination of the winter semester to August 31 inclusive).

12.21 **"Suspension"** or **"to Suspend"** means the withdrawal of such University privileges as are specified by the President, the Acting-Rector or the Hearing Panel. If no particular privileges are specified, **"Suspension"** shall entail the withdrawal of all University privileges, including the right to write examinations and the right to enter and be upon University property, in which case the student, during such suspension, may only come upon University property for a specified purpose, previously authorized in writing by a Disciplinary Officer. Suspension

shall be recorded on the academic transcript as follows: "Required to withdraw. May not resume studies until (date)". At the date for resumption of studies, the notation shall be removed from the transcript but shall continue to be maintained in the confidential files of the Dean of Students.

12.22 **"Threatening or violent conduct"** means:

a) assaulting another Member; or

b) threatening another Member or group of Members with bodily harm or causing another Member or group of Members to have reasonable grounds to fear bodily harm; or

c) creating, or threatening to create, a condition, which unnecessarily endangers or threatens the health, safety or well-being of another Member or group of Members or threatens the damage or destruction of property.

12.23 **"Tribunal Hearing Pools"** means the tribunal pools created in accordance with the *Policy on the Establishment of Tribunal Hearing Pools*.

12.24 **"University"** means, unless the context warrants otherwise, Concordia University and any of the University's constituent entities, and any person acting in his or her capacity as a representative of the University or any of its constituent entities.

13. Ambiguities

Wherever there is doubt or ambiguity regarding any provision of this Code or the procedure to be followed, that interpretation or procedure which appears to be most equitable and consistent with the general purposes and philosophy of this Code shall be adopted. Except for those terms specifically defined in this Code, the terms used shall have their usual meanings.

SECTION III JURISDICTION

14. Code Applies to All Members of the University

This Code applies to all Members of the University.

15. Jurisdiction

Complaints with respect to a violation of this Code may be made by Members of the University in relation to the conduct of other Members where the complainant is directly affected by the conduct in question. As well, the University, through its designated officers, may make a complaint on its own behalf. The alleged violation must have taken

place on University premises, either rented or owned, or on other premises, in the course of any University-sponsored activity or event.

Exceptionally, complaints may be made regarding an alleged violation that has taken place at another location, where the potential consequences of the violation may adversely affect the complainant's course of work or study at the University.

16. Complaints Against Former Students

For the purpose of disciplinary review of a student's conduct, the student need only have been a student at the time of the alleged offence. If any proceedings under this Code cannot be initiated or completed because a student against whom a complaint has been filed has graduated or ceases to be registered, the proceedings shall continue if the student registers again for a new program or if the alleged offence, if proven, would impugn the validity of the degree conferred.

If a complaint has been upheld against a student who later graduates or ceases to be registered prior to the fulfillment of the sanction imposed, a notation shall be made in the graduate's or former student's record stating that he or she has been sanctioned under the Code and cannot return to the University until such time that he or she has fulfilled the sanction imposed.

17. Contractors their Employees and Visitors

Contractors, their employees and representatives, and visitors to the University as well as any other persons associated with or taking courses at the University or on University premises are expected, while on University Premises or present in any University related activity, to conduct themselves in a manner consistent with this Code. Violations of this Code by such persons other than Members of the University may be dealt with, where applicable, as potential breaches of contract and, in addition thereto, the President and any other person designated by the President may exclude each such person from any University premises and take any other steps that may be appropriate. Should such persons believe that they have been subjected to conduct on campus in violation of this Code, they may consult the Office of Rights and Responsibilities for advice.

SECTION IV OFFENCES PROHIBITED UNDER THIS CODE

18. Offences

The following constitute conduct injurious to the pursuit of work and studies in a safe and civil environment and are prohibited under this Code:

18.1 Discrimination, as defined in sub-article 12.7;

18.2 The distribution, communication, publication or public exhibition by any means of any matter deemed to be discriminatory or to expose a person or persons to hatred or contempt by reason of the fact that that person or those persons are identifiable on the basis of a prohibited ground of discrimination, as contemplated under the Québec *Charter of Human Rights* or under the *Canadian Human Rights Act*, and for which there is no *bona fide* and reasonable justification;

18.3 Harassment, as defined in sub-article 12.10;

18.4 Sexual harassment, as defined in sub-article 12.19;

18.5 Threatening or violent conduct, as defined in sub-article 12.22;

18.6 Offences against property, as defined in sub-article 12.13;

18.7 Knowingly furnishing false information or knowingly reporting a false emergency to any University official, faculty member or office;

18.8.1 Maliciously activating fire alarms;

18.8.2 Bomb threats;

18.8.3 Theft or abuse of computing facilities or computer time, including but not limited to: unauthorized entry into a file to copy, use, read, or change its contents; unauthorized transfer of a file; unauthorized use of another individual's identification or password; use of computing facilities to interfere with the work of another student, faculty member, or University official; deliberately introducing a virus in the computer network; or use of computing facilities to interfere with a University computing system;

18.8.4 Unauthorized entry into any University property;

18.8.5 Obstruction or disruption of teaching, research, administration, study, student disciplinary procedures or other University activity (not to be

construed in such a way as to prohibit peaceful assemblies and demonstrations and lawful picketing);

18.8.6 Camping or lodging on University property other than in authorized facilities;

18.9 Forging or, without authority, knowingly altering, using, receiving or possessing University supplies or documents (including without limitation, records, keys, electronic devices or identifications);

18.10 Hazing or any method of pre-initiation or initiation into a student organization or any pastime or amusement engaged in with respect to such an organization which causes, or is likely to cause, bodily danger, physical harm, or personal degradation or disgrace resulting in physical or mental harm;

18.11 Unlawful manufacture, distribution, possession, use, sale or the attempted manufacture, distribution, or sale of controlled substances;

18.12 Possession, use, threatened use, storage, or manufacture of explosives, firebombs, or other destructive devices;

18.13 Possession, use, threatened use, or manufacture of firearms, ammunition, dangerous chemicals or other weapons, except as expressly authorized by law or University regulations;

18.14 Unauthorized use or duplication of the University's name, trademarks, logos or seals; and

18.15 Any other action that is not specifically described in this Section IV but which is an offence described in any federal, provincial or municipal law or regulation, which occurs in the University context, and which can reasonably be said to adversely affect the pursuit of works or studies in a safe and civil environment, or the safety and security of a Member or a group of Members of the University.

SECTION V INFORMAL RESOLUTION OF COMPLAINTS

19. Consultation with the Advisor on Rights and Responsibilities

19.1 The Advisor on Rights and Responsibilities shall be impartial in the exercise of his or her functions, and shall respect the confidentiality of all parties to any matter in which the Advisor has been requested to assist.

19.2 Members of the University who believe that they have been subjected to conduct that violates this Code may consult the Advisor. The primary goal of the consultation is that the complainant be assisted in making an informed choice as to the most appropriate method of resolution to a complaint or conflict.

19.3 Normally, a complaint should be filed with the Advisor within two (2) months of the alleged violation. This period may be extended at the discretion of the Advisor when, in the opinion of the Advisor, there are serious and compelling reasons to grant such an extension. If the person against whom the complaint is made (the respondent) is a member of a union, the Advisor shall inform the complainant of any delays regarding disciplinary procedures which may be prescribed in the respondent's collective agreement.

19.4 The Advisor may, upon written notice to the complainant, refuse to assist in informal resolution or to proceed with a formal complaint, on one or more of the following grounds, (to be set forth in the written notice) in which case the complainant, if he or she is a student, shall have the recourse set forth in sub-article 19.5:

a) is not within the jurisdiction of this Code, in which case the Advisor shall, if appropriate, re-direct the complainant to the relevant channels for redress; or
b) is trivial, frivolous, vexatious or made in bad faith; or
c) is being heard, or has already been heard by another University officer, or through another University procedure; or
d) does not appear to be supported by sufficient evidence.

19.5 If the Advisor has refused to proceed with a formal complaint, the complainant may appeal such a refusal within ten (10) Days of receipt of the Advisor's notice contemplated under sub-article 19.4, by submitting a request in writing to the Advisor and the Secretary. A Hearing Panel shall be convened as soon as possible after receipt of the notification by the Secretary and normally within ten (10) Days. Once a hearing date is fixed by the Secretary, each of the complainant and the Advisor shall deliver written submissions to the Secretary at least two (2) Days prior to the date fixed for the hearing. The Hearing Panel shall render its reasoned decision based on such written submissions. The Secretary shall advise each of the complainant and the Advisor with the names of the panelists no later than five (5) Days before the hearing. The provisions of sub-article 26.8 shall apply, except that a reasoned objection to the participation of a panelist on the grounds of potential bias shall be filed no later than three (3) Days before the hearing. The decision of the Hearing Panel is final.

19.6 If the Advisor does not make a determination under sub-article 19.4, the complainant shall decide upon one of the following courses of action:

a) to proceed with informal conflict resolution under article 20 or 21; or
b) to proceed with a formal process under Section VI or Section VII; or
c) to take no further action; or
d) to pursue any other course of action available at law, under a collective agreement or under any other University policies or procedures.

20. Procedures for Informal Resolution

20.1 If the complainant opts to proceed with informal conflict resolution, the complainant may authorize the Advisor to take steps to attempt an informal resolution of the complaint. Such steps may take a variety of forms, for example, helping to clarify perceptions, raising awareness of the impact of certain conduct, reconciling differences or sorting out misunderstandings. The parties may be brought together or communication may be effected through the Advisor.

20.2 Where the situation lends itself to structured mediation and both parties agree thereto, the Advisor may personally act as mediator, or may assist the parties in obtaining the services of another Member of the University who is qualified to perform this function.

20.3 Any informal agreement reached between the parties through informal conflict resolution is entirely voluntary. Neither the Advisor nor any other mediator has authority to impose conditions or sanctions upon either party.

20.4 The complainant may withdraw the complaint at any point during the process of informal resolution. As well, the Advisor may withdraw from the informal process if the Advisor determines that no useful purpose will be achieved by continuing to attempt informal resolution.

20.5 Normally, attempts at informal resolution shall not last longer than three (3) months.

21. Referral to the Dean of Students

21.1 Where a concern has been raised about a student's conduct, and, in the opinion of the Advisor, it cannot be adequately addressed using the range of informal options described in article 20, the Advisor may, with the agreement of the complainant, refer the matter to the Dean of Students for disposition.

21.2 The Advisor shall forward the details of the matter, in writing, to the Dean of Students, who shall meet with the respondent.

21.3 In disposing of the matter, the Dean of Students shall seek a response, which is instructive for the respondent and which is intended to help prevent further problems of behaviour. Responses may include, but are not limited to, the following examples:

a) issuing of a verbal or written warning not to repeat the behaviour in question;

b) requesting that the respondent give a verbal or written apology; or

c) directing that the respondent's University computer privileges be suspended, where the complaint concerns abuse of such privileges. This measure may only be implemented if it can be done in such a manner as to not hinder the student's academic activities.

21.4 The Dean of Students will maintain a file on the matter and will provide a written summary of the outcome to the Advisor who will, in turn, inform the complainant.

22. Files of Complaints Resolved Informally

Upon resolution of a complaint by the informal process, the Advisor shall prepare a summary of the matter, but shall remove all information identifying the parties from the file.

SECTION VI PROCEDURES FOR ADJUDICATING FORMAL COMPLAINTS AGAINST STUDENTS

23. Formal Complaints

Formal complaints made by students against other students shall be adjudicated by a Hearing Panel consisting only of students. Formal complaints made by any Member of the University who is not a student against a student shall be adjudicated by a Hearing Panel consisting of students, faculty and/or administrative and support staff.

24. The Secretary

24.1 A permanent Secretary of the Code of Rights and Responsibilities Hearing Panels shall be appointed by the Secretary-General. The Secretary shall be responsible for the administrative functioning of the Hearing Panels and shall maintain the confidential files and recordings of proceedings of the Hearing Panels.

24.2 Similarly, a permanent Secretary of the Code of Rights and Responsibilities Appeals Panels shall be appointed by the Secretary-General and shall be responsible for the administrative functioning of the Appeals Panels and shall maintain the confidential files and recordings of proceedings of the Appeals Panels.

25. Structure of Hearing Panels

25.1 Where a formal complaint is made by a student against another student, the Secretary shall select a Hearing Panel composed of three (3) graduate or undergraduate students drawn from the Student Tribunal Pool and one (1) non-voting chair.

25.2 In all other cases, the Secretary shall select a Hearing Panel composed of:

a) one (1) non-voting chair; and
b) two (2) undergraduate or graduate students drawn from the Student Tribunal Pool;
c) one (1) faculty member drawn from the Faculty Tribunal Pool; or one (1) member of the administrative or support staff drawn from the Administrative and Support Staff Tribunal Pool if the complainant is a member of the administrative or support staff. If the complainant is the University (as per article 15), a member of the senior administration or the Security Department, the member shall be drawn from the Faculty Tribunal Pool.

26. Initiating a Formal Complaint

26.1 A complainant may opt to proceed directly to a formal complaint at the outset or after an attempt at informal conflict resolution has been unsuccessful No statements, documents or information brought forward in the course of an attempt at informal conflict resolution may be used or referred to should a formal complaint be initiated.

26.2 In the event that a formal complaint proceeds, the following provisions shall apply.

26.3 The Advisor shall provide the complainant with a copy of this Code and shall inform the complainant of the following:

a) the required format for submitting the complaint, which must be made in writing, signed and dated and must identify the complainant and the respondent and the precise nature of the complaint, including the provision(s) of the Code under which the complaint is being filed;
b) the procedures which shall be followed by a Hearing Panel;

c) the right of the complainant and the respondent to consult any person in the preparation of his or her case, and to be accompanied or represented before a Hearing Panel by any Member of the University. If the complainant is a student, he or she also has the option of obtaining a student advocate through the services of Advocacy and Support Services or CSU Student Advocacy Centre; and

d) the right of appeal.

26.4 Upon receipt of the written complaint, the Advisor shall immediately notify the respondent. The respondent shall receive a copy of the Code, a copy of the complaint together with the information detailed in sub-articles 26.3 b), c) and d).

26.5 Concurrent with the notification sent to the respondent, the Advisor shall notify the Secretary who shall convene a Hearing Panel to hear the matter. Thereafter, the Secretary shall be responsible for all communications with the complainant and the respondent.

26.6 A Hearing Panel shall be convened as soon as possible after receipt of the notification by the Secretary and normally within twenty (20) Days.

26.7 Once a hearing date is fixed by the Secretary, the complainant shall submit any additional documentation substantiating the complainant's case to the Secretary no later than fifteen (15) Days before the scheduled hearing date. Such documentation shall include any supporting documents and a list of the witnesses that will appear, if any, and written statements, if any, made by witnesses regarding the complaint.

The Secretary shall forward the documentation together with a list of the panellists selected for the case to the respondent no later than ten (10) Days before the scheduled hearing date. The list of panellists shall also be sent to the complainant.

The respondent shall deposit with the Secretary whatever documentation the respondent wishes to present at the hearing and the list of witnesses who shall testify on the respondent's behalf no later than five (5) Days before the hearing. The Secretary shall immediately and no later than three (3) Days before the hearing forward a copy of the entire file to each member of the Hearing Panel. The Hearing Panel may limit the number of witnesses called by both parties taking into account their relevancy to the subject-matter of the hearing.

26.8 Either party may object to the participation of a panellist on the grounds of potential bias. A reasoned objection shall be filed no later than five (5) Days after having received the list of panellists with the Secretary who shall arrange for an alternate panellist to serve if the Secretary determines that the objection is well founded. If the Secretary feels that the objection is frivolous and the matter cannot be resolved, the issue shall be forwarded to the Chair of the Hearing Panel who shall render a final decision in this regard.

26.9 A settlement may be agreed to by the parties at any time prior to the hearing. If both parties agree to attempt a settlement, the Advisor shall convene and facilitate a meeting between them. The process is entirely voluntary but once a settlement is reached, it is binding. The Advisor shall monitor the terms of the settlement and if either party defaults on the settlement, the Advisor shall inform the other party, who may then decide to resume the formal procedure. No settlement may be imposed by either party without the full agreement of the other.

27. The Hearing

27.1 The Hearing Panel shall establish its own rules of procedure. Minimally, these rules shall provide for opening statements by the parties, the presentation of evidence and witnesses, the right of cross examination, questioning by members of the Hearing Panel, representations with respect to desired sanctions and closing statements. Hearings shall be recorded, and the cassette kept as part of the permanent record of proceedings for a period of not less than five (5) years.

27.2 The role of the Chair shall be to preside over the proceedings, keep order and ensure fairness. The Chair shall preside over the deliberations of the Hearing Panel but shall not vote. Decisions shall be by majority vote. The deliberations of the Hearing Panel shall only be attended by the Chair, the secretary of the Hearing Panel and the panelists.

27.3 The hearing shall be closed and confidential unless both parties have consented in writing to the attendance of Members of the University.

27.4 If the respondent fails, without reasonable excuse, to attend the hearing, the hearing may proceed in his or her absence or, at the Chair's discretion, the start of the hearing may be postponed. If the hearing proceeds in the respondent's absence, all rights contingent on the respondent's presence, with the exception of the right to have an advocate present to plead for postponement, are forfeited. In such a

case, a respondent's right of appeal is limited to a consideration of the reasonableness of the respondent's excuse for not appearing. If an Appeals Panel finds that the excuse is reasonable, it shall order a new hearing by a new Hearing Panel with the respondent present. The decision of the new hearing with the respondent present is appealable as if it were a first hearing.

27.5 The Hearing Panel shall provide a signed, dated and reasoned decision. The standard of proof to be relied upon by the Hearing Panel shall be one of a "preponderance of evidence". A "preponderance of evidence" standard means that the complainant must establish that the complainant's version of the facts is significantly more probable. This standard is less rigorous than the standard of "beyond a reasonable doubt" required under criminal law.

28. Sanctions

28.1 The Hearing Panel may impose one or more of the following sanctions:

a) a written reprimand;
b) conditions (the Hearing Panel does not, however, have the authority to bar a student from any academic activity);
c) payment as compensation for damage or loss of property or to otherwise rectify a situation which the student created or helped to create;
d) specified community service at Concordia University of up to ten (10) hours per week for a specified period of time not exceeding a total number of 60 hours;
e) a fine not exceeding $500 when the Hearing Panel deems that other sanctions are not appropriate or practical;
f) subject to confirmation by the President or the Acting President, a recommendation of Suspension from the University;
g) subject to confirmation by the President or the Acting President, a recommendation of Dismissal from the University;
h) subject to confirmation by the President or the Acting President, a recommendation of Expulsion from the University.

28.2 All monetary sanctions shall be payable within twenty (20) Days of the date of transmission of the Hearing Panel's decision. Subject to the provisions of sub-article 29.4, the execution of any non-monetary sanction imposed by the Hearing Panel shall not be suspended by an appeal.

28.3 The decision of the Hearing Panel shall normally be rendered within ten (10) Days of the hearing and shall be communicated in writing to both parties and the Advisor together with notice as to the appeal process provided for under this Code.

28.4 The administration and monitoring of the sanction(s) imposed shall be the responsibility of the Dean of Students. Failure to pay any monetary sanction imposed within the delay prescribed in sub-article 28.2 shall result in the amount being added to the respondent's student account. Should the respondent fail to comply with any non-monetary sanction, the Dean of Students shall, in writing, convene the student to an interview and inform the student of his or her right to be accompanied by a student advocate from Advocacy and Support Services, the CSU Student Advocacy Centre or any other member of the University community. During the interview, the student shall have the opportunity to review the evidence related to the alleged violation of the sanction(s) and to provide the Dean of Students with his or her explanation.

Following the interview, the Dean of Students may recommend to the President that the student:

a) not be permitted to re-register until such time as the student has fully complied with the sanction(s) imposed;
b) be suspended, or given an additional suspension if the original sanction was a suspension;
c) be expelled if the student has repeatedly, more than twice, failed to respect the sanction imposed; or
d) that his or her diploma be withheld until such time as the student has fully complied with the sanction(s) imposed.

If the student fails, without reasonable excuse, to attend the interview with the Dean of Students, the Dean of Students shall review the evidence related to the alleged violation of the sanction(s) and, as the case may be, make a recommendation to the President.

29. Appeals

29.1 A party who wishes to appeal a decision or sanction of the Hearing Panel, or both, shall apply in writing to the Secretary for the authorization to lodge an appeal. Such request for authorization to appeal shall be submitted to the Secretary no later than fifteen (15) Days after the date of transmission to the parties of the decision of the Hearing Panel.

29.2 Any request for authorization to appeal may be based only on the following grounds:

a) the discovery of new evidence following the rendering of the decision of the Hearing Panel;
b) the presence of serious and prejudicial procedural defects; or
c) the decision of the Hearing Panel is patently unreasonable.

29.3 The request for authorization to appeal shall state in clear and precise terms the grounds on which the appeal is based. Upon reception of the request for authorization to appeal, the Secretary shall provide the respondent with a copy of said request.

29.4 In its request for authorization to appeal, an appellant subject to a sanction may ask the Appeals Panel to suspend the execution of said sanction until a final decision has been rendered by the Appeals Panel.

29.5 The respondent shall submit a concise written reply to the appellant's request for authorization to appeal and the grounds invoked within five (5) Days of its reception. This statement shall identify the respondent's position on each ground of appeal.

29.6 All parties to the appeal shall have access to the audiotape recordings for the purpose of preparing their statements.

29.7 An Appeals Panel shall be convened as soon as possible after receipt of the request by the Secretary and normally within fifteen (15) Days.

29.8 The Secretary shall select an Appeals Panel composed of:

a) one (1) non-voting chair;
b) two (2) graduate or undergraduate students drawn from Student Tribunal Pool;
c) two (2) faculty members drawn from the Faculty Tribunal Pool;
d) one (1) member of the administrative or support staff drawn from the Administrative and Support Staff Tribunal Pool.

Notwithstanding sub-articles 29.8 c) and d) above, if the complainant is a member of the administrative and support staff, the Appeals Panel shall be composed of two (2) members of the administrative or support staff drawn from the Administrative and Support Staff Tribunal Pool and one (1) faculty member drawn from the Faculty Tribunal Pool. If the complainant is the University (as per article 15), a member of the senior administration or the Security Department, the Appeals Panel shall be composed of two (2) faculty members drawn from the Faculty Tribunal Pool and one (1) member of the administrative or support staff drawn from the Administrative and Support Staff Tribunal Pool.

29.9 In no case shall members of the Appeals Panel also have been members of the Hearing Panel which conducted the original hearing.

29.10 The Appeals Panel shall decide whether an appeal shall be heard, having regard to the circumstances of each case.

29.11 The Appeals Panel shall normally render its decision with respect to the request for authorization, and, as the case may be, the suspension of the execution of any sanction, based upon the written record only, within five (5) Days of its consideration of the request. The Appeals Panel shall be provided with the complete file of the Hearing Panel.

29.12 The Appeals Panel shall render its decision with respect to the request for authorization in writing, with brief reasons supporting its decision.

29.13 If the authorization to appeal is granted, it shall normally be heard within fifteen (15) Days of the decision to authorize the appeal. Notification of such decision to authorize the appeal shall be sent to both parties.

29.14 During the hearing of the appeal, the appellant and the respondent are allowed to make oral representations but are not allowed to bring witnesses or to produce new evidence. The decision of the Appeals Panel on the appeal shall only be based upon the representations made by the parties, the decision of the Hearing Panel, the written record, the complete file of the Hearing Panel and the audiotape recordings, as the case may be.

29.15 The Appeals Panel has the authority to confirm, reverse or modify the decision being appealed. Furthermore, should the appeal be based on the production of new evidence, the Appeals Panel may order a new hearing of the complaint by a new Hearing Panel.

29.16 The decision of the Appeals Panel shall be signed, dated and reasoned and shall be sent to both parties and the Advisor.

29.17 The decision of the Appeals Panel shall be final.

30. Files of Formal Complaints against Students

The Advisor shall maintain a file of all formal complaints processed. The file shall include the written complaint, the decision of the Hearing Panel and the decision of the Appeals Panel, if any. If a settlement is reached prior to a hearing, the general substance of the settlement shall be included in the file. If the complaint is withdrawn at any stage of the formal process, a notation to that effect shall be recorded, but all information identifying the parties shall be removed from the record.

SECTION VII PROCEDURES FOR ADJUDICATING FORMAL COMPLAINTS MADE AGAINST FACULTY, ADMINISTRATIVE OR SUPPORT STAFF MEMBERS OR MEMBERS OF THE ADMINISTRATION

31. General Rules

31.1 The present Section applies to complaints filed by Members of the University against faculty, administrative or support staff members or against members of the administration.

31.2 The application of the present Section to a unionized respondent is subject to the provisions of the respondent's collective agreement and to the limitations described in articles 8 and 10 of the present Code.

32. Initiating a Formal Complaint against a Faculty, Administrative or Support Staff Member or against a Member of the Administration

32.1 A Member of the University who wishes to file a formal complaint against faculty, administrative or support staff members or against members of the administration shall contact the Advisor.

32.2 The Advisor shall provide the complainant with a copy of this Code and shall inform the complainant of the following:

a) the required format for submitting the complaint, which must be made in writing, signed and dated and must identify the complainant and the respondent and the precise nature of the complaint, including the provision(s) of the Code under which the complaint is being filed;

b) the right of the complainant to consult any person in the preparation of his or her complaint, and to be accompanied or represented by any Member of the University during the process of resolution. If the complainant is a student, he or she may opt to be accompanied by a student advocate obtained through the services of Advocacy and Support Services or the CSU Student Advocacy Centre. If the complainant is a member of a union or an employee association, he or she may opt to be accompanied by a union or association representative.

32.3 If the respondent is a member of a union, the Advisor shall inform the complainant of any delays regarding disciplinary procedures, which may be prescribed in the respondent's collective agreement.

32.4 Upon receiving a formal complaint under the present article, the Advisor shall transmit the complaint to the authority to whom the complaint must be submitted under the terms of the respondent's collective agreement or the relevant University policy (the

"**Authority**"), with all the relevant information and documentation. If the respondent is a member of a union or association, a copy of the complaint and of the relevant information and documentation shall also be sent by the Advisor to the union or association.

33. Powers and Duties of the Authority

33.1 Upon receiving the complaint and all the relevant information and documentation from the Advisor, the Authority shall send a copy of these documents to the respondent.

33.2 The Authority shall also inform the respondent of his or her right to consult any person in the preparation of his or her case, and to be accompanied or represented by any member of the University during the process of resolution. If the complainant is a member of a union or an employee association, he or she may opt to be accompanied by a union or association representative.

33.3 The Authority shall then take the necessary steps to resolve the matter in such a manner as to respect the principles of natural justice and the procedures of any collective agreement or University policy, which may apply.

33.4 More specifically, the Authority may:

a) meet with the complainant and the respondent on an individual basis;
b) have access to all official files and information as are required to fulfill his or her functions, the whole subject to the applicable legislation;
c) meet any individual who might, in his or her opinion, provide information relevant to the complaint;
d) consult any University officers (Executive Director of Human Resources and Employee Relations, Legal Counsel, etc.) or outside counsellors as may be required.

33.5 All information, whether in writing or in any other form, obtained by the Authority in the performance of his or her duties shall be strictly confidential.

33.6 Upon completing his or her investigation, the Authority may dismiss the complaint, impose a disciplinary measure against the respondent or take any other action deemed appropriate in view of the result of the investigation.

33.7 When the matter has been decided by the Authority, normally within ten (10) Days after receiving the complaint, the Authority shall notify

in writing the complainant, the respondent and the Advisor of the general substance of the decision or action that was taken as a result of the complaint. If the respondent is a member of a union or association, a copy of the decision shall also be sent by the Authority to the union or association.

If the Authority has not sent such notice to the complainant within fifteen (15) Days after receiving the complaint or has not sent a notice to the complainant requesting an additional delay, the complainant shall have the right to request the Advisor to transmit the complaint to the President. In such a case, the President shall, within ten (10) Days after receiving the complaint, notify in writing the complainant, the respondent, the Advisor and the Authority of the general substance of the decision or action taken as a result of the complaint.

33.8 If the decision or action taken by the Authority does not constitute a disciplinary action as defined by the relevant collective agreement, University Policy or this Code, as the case may be, the Authority or the Executive Director of Human Resources and Employee Relations shall monitor compliance by the respondent. Once satisfied that compliance has been effected, the Authority shall so inform the complainant and the Advisor.

33.9 If disciplinary action is taken and is subsequently overturned by a higher authority or by grievance and arbitration procedures, the complainant and Advisor shall be notified.

34. Files of Formal Complaints against Faculty, Administrative and Support Staff Members or Members of the Administration

The Advisor shall maintain a file of formal complaints received against faculty, administrative or support staff members or members of the administration, which shall summarize the substance of the consultation with the complainant, the record of resolution as supplied by the authority and information that a sanction has been overturned through grievance or arbitration, if this is the case.

SECTION VIII URGENT SITUATIONS

35. Reporting and Responding to Urgent Situations

35.1 Members of the University who are faced with an urgent situation involving threatening or violent conduct, where there is reasonable cause to believe that the safety or security of persons may be threatened, shall immediately contact the Security Department. The Security Department shall take whatever reasonable action is

necessary to secure the safety of persons, and shall immediately alert the Advisor. In such case, the Advisor shall be guided by the Protocol on the Co-ordination of Urgent Cases of Threatening or Violent Conduct.

35.2 Members of the University shall forthwith report to the Advisor any conduct which they have reasonable cause to believe potentially threatens the safety or security of persons. The Advisor shall assess the situation as specified in the Protocol on the Co-ordination of Urgent Cases of Threatening or Violent Conduct, consult experts as necessary, and make recommendations as to any further action appropriate in the circumstances.

35.3 Any Member of the University who is called to a Team meeting under the Protocol on the Co-ordination of Urgent Cases of Threatening or Violent Conduct shall respond promptly.

36. Disciplinary Officers

36.1 The Members of the University listed below are hereby constituted "Disciplinary Officers". With respect to matters under this Code, the Disciplinary Officers shall have the powers, duties and obligations conferred upon them in the present Code as well as any powers reasonably incident thereto:

a) the President and Vice-Chancellor;
b) the Provost;
c) the Vice-Rectors;
d) the Academic Deans.

37. Temporary Exclusion of a Student by a Disciplinary Officer

37.1 The Disciplinary Officers may require any student to immediately leave and remain away from the campus or a part thereof, as the case may be, for a period not exceeding two (2) Days, if to their personal knowledge or based upon reliable information, they have reasonable grounds to believe that the student's continued presence on campus:

a) is detrimental to the pursuit of works and studies in a safe and civil environment; or
b) constitutes an immediate threat to the safety or security of others.

37.2 No student shall be barred from taking any examination or submitting any academic paper or report because of this provision but the Disciplinary Officer may make special arrangements as to the time and place for the completion and/or submission of any academic paper, assigned work or project, or laboratory test, work or report or writing of any exam.

37.3 A Disciplinary Officer shall immediately advise the Registrar, the Secretary, the Dean of Students, the relevant Academic Dean(s), the Advisor and the Security Department of the temporary exclusion of a student under this provision.

37.4 Any temporary exclusion ordered under the present Section shall not be deemed to be in lieu of other proceedings under this Code should the conduct for which exclusion is ordered also constitute an offence under article 18 of this Code.

38. Exclusion of a Student by the President

38.1 The President or Acting President may Suspend a student, exclude the student from any University premises and take any other steps that may be appropriate where: (a) the student presents a clear and present danger to the safety of persons or to the activities of the University as a whole or any of its Members or groups of Members; (b) the student has on one or more occasions presented a clear danger to the safety of persons or to the activities of the University as a whole or of any of its Members or groups of Members and whose identity or action has only recently been identified; or (c) the student's actions are of such a serious nature that they create an intimidating and hostile environment for work or study or constitute a serious threat to the ability of the University and its members to carry out the University's functions.

38.2 In such cases, the President or Acting-Rector shall provide the student with a written suspension notice and shall concurrently forward a copy of the suspension notice to the Registrar, the Secretary, the Dean of Students, the relevant Academic Dean(s), the Advisor, and the Security Department. The President or Acting-Rector shall inform the student of the student's right to consult an advocate and shall also provide the student with:

a) a copy of any supporting information;
b) a copy of the Code.

38.3 In such a case, the President or Acting-Rector shall immediately lay a complaint against the student under Section VI of this Code. The regular delays of this Code shall not apply and a hearing into the complaint shall be held within ten (10) Days of the suspension order. The President or Acting-Rector may designate another Member of the University to represent him or her at the hearing. The Hearing Panel shall render its decision and inform the parties within three (3) Days of the hearing. If no hearing into the complaint has been held within fifteen (15) Days of the suspension order for reasons other than the reason contemplated under sub-article 38.4, the suspension order shall be suspended until the Hearing Panel shall re-impose the suspension.

38.4 Should the suspended student be unable to attend the hearing within the prescribed delay, he or she shall notify the Secretary as soon as he or she is able to attend a hearing. Upon such notification, the Secretary shall convene a hearing as soon as possible.

38.5 In the event that the Hearing Panel determines that the original complaint was unfounded, that decision shall not invalidate the Presidents' or Acting-Rector's prior action; however, every effort shall be made to remedy any academic disadvantage that the student may have experienced as a consequence of the temporary suspension.

38.6 Upon the lifting of the Suspension, the Secretary shall notify the Registrar, the Dean of Students, the relevant Academic Dean(s), the Advisor and the Security Department.

39. Temporary Exclusion of a Member of the Faculty or Administrative and Support Staff

39.1 Where a member of the faculty or administrative and support staff presents a clear and present danger to the safety or security of persons or to the activities of the University as a whole or of any of its individual Members, the matter shall be dealt with according to the provisions of the relevant collective agreement or University Policies.

39.2 A Member against whom such action is taken may seek recourse through the grievance procedures of the relevant collective agreement or the grievance procedures contained in University Policies, where they exist.

SECTION IX APPOINTMENT AND FUNCTIONS OF THE ADVISOR

40. The Advisor

40.1 The Advisor on Rights and Responsibilities shall be appointed by the President upon the recommendation of an advisory committee, composed of representatives of the University constituencies including at least one (1) student, struck for this purpose. The Advisor shall report to the President.

40.2 The appointment shall be made for an initial term of two years, renewable for further terms of five years. During the fourth year of each such term, the President shall appoint an appraisal committee, composed of representatives of the University constituencies including at least one (1) student, which shall review the operations of the Office of Rights and Responsibilities and make recommendations to the President. This review shall include, but shall not be limited to,

consultations with the internal community as well as external appraisal.

41. The Office of Rights and Responsibilities

41.1 The Advisor shall direct the operations of the Office of Rights and Responsibilities and carry out all duties described in this Code.

41.2 The Advisor shall submit an annual report to the President by September 30 of each year. The report shall detail the activities of the Office of Rights and Responsibilities, including statistics on all complaints received, and make recommendations, as necessary, with regard to either the Code of Rights and Responsibilities or the operations of the Office of Rights and Responsibilities. The annual report shall be published in the University's newspaper and shall be submitted, for information purposes, to the Senate and Board of Governors.

42. Complaints

If a Member considers that the Advisor has failed to follow the procedures outlined in this Code with respect to any matter to which the Member has been a party, he or she may submit a written complaint, detailing the alleged procedural failure, to the President. The President shall investigate the complaint and inform the Member of the results of the investigation, normally within fifteen (15) Days of the receipt of the written complaint by the President.

SECTION X MISCELLANEOUS

43. Confidential Nature of Files

All complaint files maintained by the Advisor shall be confidential and accessible only to the staff of the Office of Rights and Responsibilities. Such files shall be destroyed according to a retention schedule determined in accordance with provincial legislation.

44. Delays

In the calculation of any delay set out in the Code, the months of July and August shall not be taken into account; however, in the case of a hearing before a Hearing Panel or an Appeals Panel that commenced before July 1, the regular delays set out in this Code shall apply.

45. Notices

Any written notice to any person shall be sent by courier, e-mail or fax to the last address or fax number provided by said person to the University and shall be deemed to be received one (1) day after delivery.

46. Language

Any party or witness participating in a hearing before a Hearing Panel or an Appeals Panel may make their presentation in either English or French.

47. The Secretary-General

The overall responsibility for the implementation and recommended amendments to the Code shall rest with the Secretary-General.

Appendix A

The Coordination of Urgent Cases of Threatening or Violent Conduct

"The Protocol"

BASIC PRINCIPLES

Incidents involving threatening or violent conduct require a response, which is prompt, based on thorough and accurate information, effective and above all, well coordinated. Incidents may have a broad impact across the University, and require a variety of interventions. The purpose of this protocol is to ensure that these principles are followed in every case. The protocol, which functions with, the *Code of Rights and Responsibilities*, provides for the Advisor or another person designated by the President and Vice-Chancellor with the authority to organize an effective response to incidents and cases.

The protocol is designed to ensure that the responsibility for decision-making is vested in the hands of management. At the same time, it builds in special support and expertise for managers who may require assistance in resolving incidents. Further, the protocol ensures that all decision-making is closely coordinated, and that the appropriate University authorities are kept informed of developments as they unfold in a given case. Lastly, the protocol builds in a reporting and review process, which ensures both accountability and the ongoing refinement of case management strategies.

SCOPE OF THE PROTOCOL

The protocol covers incidents of threatening or violent conduct by one or more individuals, or conduct deemed potentially dangerous, as described in the *Code of Rights and Responsibilities*. The protocol is not intended to cover major emergencies, such as fires or chemical spills, which are handled by Environmental Health and Safety. It is also not a disaster recovery plan in the event of a major incident, for example, a bombing.

CASE MANAGEMENT - STAFFING AND STRUCTURES

This protocol is implemented by the Advisor on Rights and Responsibilities, whose function is to coordinate the work of an ad-hoc case management team (the "**Team**").

1. <u>The Advisor</u>

The responsibilities of the Advisor are:

- to bring together the authorities who shall make decisions, together with experts where necessary, to manage the case;
- to gather pertinent information
- to obtain expertise if needed
- to assist in analyzing and assessing information obtained and to make recommendations for action
- to centralize internal communications;
- ensure that the victim(s), if any, and the members of the community who are affected by the incident are supported, consulted where appropriate and kept informed of developments in the case;
- to ensure follow-up of decisions;
- to maintain case records, and to ensure that the appropriate senior authorities are informed of developments;
- to evaluate team actions and ensure that any "lessons learned" are integrated into protocols and procedures, and conveyed to the appropriate authorities.

2. <u>The case management team</u>

1. **The core group**: The Advisor and the Operations Manager or Director of Security form the core group. In cases involving a known or suspected mental health problem, the core group shall also include a representative from Health Services. In addition, the core group for each case shall typically include the authorities responsible for the department(s) or unit(s) concerned.

    a) **Extended team as needed:** In addition to the core group, others who have a direct responsibility for an aspect of the case, or

whose expertise is required, may be either added to the team or consulted as needed, for example:
Legal Counsel
A representative of Public Relations
A representative of Environmental Health and Safety
An Ombudsperson
The Dean of Students
A member of Counselling & Development
A member of Multi-faith Chaplaincy
The managers of other departments where the incident has had a serious impact upon department members
A representative of Human Resources
Union representatives
A psychiatrist
A police liaison officer
An expert on critical incident stress de-briefing, etc.

2. **Importance of attendance at case conferences**: Those who are requested to participate as members of either the core group or an extended team shall accord such requests the highest priority.

IMPLEMENTING THE PROTOCOL

1. Decision to implement the protocol

The Advisor may receive a report of threatening or violent conduct directly from the person(s) implicated in the incident, or via a third party who has become aware of the situation. The Advisor shall obtain as much information as is necessary to make a preliminary assessment of the situation. The Advisor shall consult others as necessary. If this assessment clearly indicates that team action is not required, the Advisor shall recommend appropriate action to resolve the matter, or refer the matter elsewhere. If there is an indication of urgency or there are reasonable grounds to believe that the behaviour potentially poses a risk to others, the Advisor informs Security of the situation and proceeds to determine the composition of the case management team, and to convene a case conference.

2. Action

The case conference shall carry out some or all of the following actions, in whatever order is appropriate and depending upon the nature of the situation:

a) Determine what facts are known, what information is still needed, and how such information may be obtained.
b) Determine whether any further special expertise is required.

c) Start a case log detailing facts and recording all decisions.
d) Determine any immediate action to be taken with regard to any perpetrator(s). This might include removal from the premises, filing of police charges, emergency suspension, referral for medical/psychological care, security precautions, etc.
e) Arrange for support, care and follow-up of any victim(s). This might include medical/psychological care, temporary leave, security precautions, ensuring that employment or student status is not jeopardized, etc.
f) Arrange for internal communiqués as necessary. The principle is to ensure that the community at large and/or those most directly affected are given appropriate information about the facts, the action being taken, and how to get help if they are affected by the incident.
g) In the case of an incident which may become, or has become known to the media, plan a media strategy, brief those implicated on how to deal with media requests.
h) Arrange for critical incident stress de-briefing sessions for students/employees who may be affected, as needed.
i) Start CSST reporting process as appropriate.
j) Establish communication links for specific aspects of the case.

3. Follow-up

The team thereafter plans any further meetings and establishes responsibility among team members for the follow-up of decisions. Follow-up activities need not always involve full team meetings, provided that all activities are coordinated by the Advisor, who shall be informed of all developments in the case.

4. Files

All files relating to case management are confidential. The Advisor shall maintain a case log containing the facts of the case and a record of all decisions and action taken. The Advisor shall also keep copies of pertinent documents associated with the case (copies of Security reports, correspondence, etc.) These documents shall constitute the case file, to be maintained in the Office of Rights and Responsibilities.

5. Confidentiality

Team members and consultants shall maintain confidentiality with regard to nominative information, to the extent that a situation is not publicly reported in the media. Information shall be divulged on a need-to-know basis.

6. Evaluation

The Advisor shall be responsible for evaluating the actions taken by case management teams, consulting with team members and persons involved in the case as necessary. Any lessons learned with regard to errors made or effective strategies adopted should be incorporated into the protocol. The President shall approve any amendment to this protocol. If the evaluation reveals a need to amend other University practices or regulations, the Advisor may make recommendations to that effect to the appropriate authorities.

7. Reporting

When a particularly complex, serious or long case is concluded, the Advisor shall write a report summarizing the case and submit it to the President's Cabinet. Copies of the report should be sent to participating team members. The report should include any observations emanating from the evaluation and any recommendations for review or changes to policy or practice, which the team wishes to make. These reports are the key to ensuring accountability in decision-making, consistency of response across different sectors of the University and the timely review of all policies and procedures regarding conduct.

Terms of Reference of the Ombuds Office

SCOPE

1. The Ombuds Office shall be independent of all existing administrative structures of the University. The Ombudsperson may help to resolve problems informally and may inquire into any University-related concerns or complaints. As well, he or she may inquire into the application of any policy, rule or procedure of the University. However, he or she may not inquire into the application or interpretation of a collective agreement, nor into the alleged violation of the duty of fair representation against a certified union. The Ombudsperson may make any recommendations he or she deems appropriate with regard to resolving problems or improving policies, rules or procedures. However, he or she shall have no actual authority to impose remedies or sanctions, or to enforce any policy, rule or procedure.

Functions of the Ombuds Office

2. Specifically, the Ombudsperson shall:
   (i) inform University members about existing policies, rules and procedures and advise them as to the appropriate channel of redress for any concern or complaint they may have;
   (ii) assist University members to resolve complaints informally and quickly;
   (iii) at his or her discretion, conduct an independent and objective inquiry into complaints when normal channels of recourse have been exhausted;
   (iv) explain decisions taken by University decision-makers when complaints are not substantiated;
   (v) at his or her discretion, recommend solutions when complaints are found to be valid;
   (vi) bring to the attention of those in authority any policies, rules or procedures which appeal unclear or inequitable or which might jeopardize the rights or freedoms of any members of the University. The Ombudsperson may suggest changes to the existing policies, rules or procedures or offer advice on the development of new policies, rules or procedures.

Special Concerns of the Ombuds Office

3. In dealing with inquiries, the Ombudsperson shall be concerned that all members of the University are dealt with and deal with others fairly and more specifically that:
   (i) decisions affecting members are made with reasonable promptness;
   (ii) procedures used to reach decisions are adequate and the criteria and rules upon which such decisions are based are appropriate;

(iii) procedures and criteria used in making decisions are clearly communicated to those affected.

Procedures

4. The Ombudsperson shall have immediate access to such University records, reports or documents as are required to fulfill his or her functions. Requests for such access shall receive priority from all members.

5. If the Ombudsperson decides to inquire into a matter, he or she shall make every effort to consult the relevant parties and give such parties the opportunity to reply, should they so wish.

6. Upon the conclusion of an inquiry, the Ombudsperson shall advise all parties to a complaint of his or her findings and any recommendations that he or she has formulated.

7. In addition, the Ombudsperson may bring his or her findings to the attention of those in authority and make whatever recommendations he or she deems appropriate and to whomever within the University he or she feels should receive them. Such recommendations may bear either on the actions or decision of an individual or a group, or on the policies rules and procedures which gave rise to them. If, upon receipt of such findings or recommendations, a University authority proceeds to disciplinary action in order to resolve the matter, the procedure of any relevant University policy or collective agreement shall be followed.

8. The Ombudsperson may refuse to take up any case where he or she judges his or her intervention would be inappropriate and may withdraw from a case if continued involvement is ill-advised.

9. If the Ombudsperson refuses to take up a case or withdraws from a case, he or she shall, on request, provide the applicant with a written statement of the reason.

10. The Ombudsperson shall avoid involvement in cases where there may be a conflict of interest.

Confidentiality

11. Should the pursuit of any inquiry necessitate the disclosure of details that identify an applicant, the applicant shall be informed. Any disclosure shall be limited to those who have a need to know.

12. Should an applicant decide to withdraw an application in order to protect his or her anonymity, the Ombudsperson shall respect this decision.

13. The Ombudsperson shall respect the confidentiality of any confidential information or materials to which he or she has access.

14. Should the Ombudsperson consider that the response to his or her recommendation has been unsatisfactory, he or she shall be entitled to make the recommendation public, provided always that, subject to Article 11, the confidentiality of the applicant is respected.

Files

15. The Ombudsperson shall maintain suitable records of complaints, findings and recommendations which shall be accessible only to the staff of the Ombuds Office. Such files shall be destroyed according to a retention schedule determined in accordance with provincial legislation.

Appointment of the Ombudsman

16. The Ombudsperson shall be appointed by the President upon the recommendation of an advisory committee struck for this purpose. The Ombudsperson shall report to the President.

17. The appointment shall be made for an initial term of two years, renewable for further terms of five years. During the fourth year of each such term, the President shall appoint an appraisal committee which shall review the operations of the Ombuds Office. This review shall include, but not be limited to, consultations within the internal community as well as external appraisal.

18. The Ombudsperson shall submit an annual report to the President by September 30 of each year. The report shall detail activities of the Ombuds Office, including statistics on complaints received, and shall make recommendations, as necessary. The President shall ensure that the appropriate administrators consider and respond to the recommendations contained in the report.

19. The annual report shall be published in the University's newspaper.

Complaints Relating to the Operations of the Ombuds Office

20. If a member considers that the Ombudsperson has committed a procedural or substantive violation of these terms of reference, with respect to any matter to which the member has been a party, he or she may submit a written complaint, detailing the alleged violation, to the President. The President shall investigate the complaint and inform the member of the results of the investigation.

Thesis Regulations

Submission of Theses

A booklet entitled *Thesis Preparation and Thesis Examination Regulations* is available in the Thesis Office. A thesis may be submitted to the Thesis Office in the School of Graduate Studies (2145 Mackay Street, main floor) at any time, but if a candidate intends to graduate at a particular graduation, it must be submitted before the deadlines set out in the Academic Calendar each year.

Supervisor's Approval

The student's supervisor should approve the thesis for examination before the formal submission to the Thesis Office. Students should check with their program to inform themselves of earlier deadlines. The Graduate Program Director and the Dean of Graduate Studies may be required to arbitrate in a case where the student and supervisor cannot reach an agreement on the readiness of the thesis for submission. Although it is not recommended, the student always maintains the right to defend his or her thesis without the supervisor's approval.

Some programs require earlier deadlines than the Thesis Office in order to allow time for approval by the student's supervisor. Students should check with their programs to inform themselves of earlier deadlines.

Thesis Formats

When the thesis is formally submitted to the Thesis Office, it must be in its final version. The Thesis Office checks the format to ensure that it meets the regulations as set forth below, and forwards the thesis copies with the examiners' evaluation forms to the student's program so that the thesis examination can be scheduled.

Non-Thesis Formats

A number of programs require their students to submit a Research Paper, Major Report, Internship Report, etc. to the Thesis Office to be bound. Any document sent out to be bound by the Thesis Office should conform to the same requirements as outlined in the *Thesis Preparation and Thesis Examination Regulations Booklet* and include a Title Page, Signature Page, Abstract, Table of Contents, etc. Students should submit such documents to the Thesis Office at least two weeks before the final deadline (April 15 for Spring graduation; September 15 for Fall graduation). This will ensure that the student has sufficient time to make any required format changes.

Manuscript-Based Thesis

As an alternative to the traditional thesis format, a dissertation can consist of a collection of papers that have a cohesive, unitary character making them a report of a single program of research. The structure for a manuscript-based thesis must conform to the following:

1. Candidates have the option of including, as part of the thesis, the text of one or more papers submitted, or to be submitted, for publication, or the clearly-duplicated text (not the reprints) of one or more published papers. These texts must conform to the *Thesis Preparation and Thesis Examination Regulations Booklet* with respect to font size, line spacing and margin sizes and must be bound together as an integral part of the thesis. (Reprints of published papers can be included in the appendices at the end of the thesis).

2. The thesis must be more than a collection of manuscripts. All components must be integrated into a cohesive unit with a logical progression from one chapter to the next. In order to ensure that the thesis has continuity, connecting texts that provide logical bridges between the different papers are mandatory.

3. The thesis must conform to all other requirements of the *Thesis Preparation and Thesis Examination Regulations Booklet* in addition to the manuscripts. The thesis must include the following: a table of contents; an abstract; an introduction which clearly states the rationale and objectives of the research, a comprehensive review of the literature (in addition to that covered in the introduction to each paper); a final conclusion and summary; and, rather than individual reference lists after each chapter or paper, one comprehensive bibliography or reference list, at the end of the thesis, after the final conclusion and summary.

4. As manuscripts for publication are frequently very concise documents, where appropriate, additional material must be provided (e.g., in appendices) in sufficient detail to allow a clear and precise judgment to be made of the importance and originality of the research reported in the thesis.

5. In general, when co-authored papers are included in a thesis, the candidate must have made a substantial contribution to all papers included in the thesis. In addition, the candidate is required to make an explicit statement in the thesis as to who contributed to such work and to what extent. This statement should appear in a single section entitled "Contributions of Authors" as a preface to the thesis. The supervisor must attest to the accuracy of this statement at the doctoral oral defence. Since the task of the examiners is made more difficult in these cases, it is in the candidate's

interest to clearly specify the responsibilities of all the authors of the co-authored papers.

6. When previously published copyright material is presented in a thesis, the candidate must obtain, if necessary, signed waivers from the co-authors and publishers and submit these to the Thesis Office with the final deposition.

7. Irrespective of the internal and external examiners reports, if the oral defence committee feels that the thesis has major omissions with regard to the above guidelines, the candidate may be required to resubmit an amended version of the thesis.

8. In no case can a co-author of any component of such a thesis serve as an external examiner for that thesis.

Theses written in French. Students who intend to submit their thesis in French should make this clear when the thesis topic is originally submitted to their supervisor for approval.

Theses written in a Language other than English or French. If a student wishes to submit the thesis in a language other than English or French, the thesis supervisor should make a recommendation to this effect to the graduate committee when the thesis topic is submitted for approval. Upon approval of the recommendation, the Thesis Office should also be notified.

Number of Copies for a Doctoral Thesis. Six clean copies of the thesis must be submitted for all programs; the Special Individualized Program requires seven copies. After graduation, four of these copies will be bound. Two will be deposited in the University Library, one given to the student's department and one to the thesis supervisor. The cost of binding the required four copies is included in the graduation fee. If the student wishes any additional copies of the thesis bound for personal use, the copy (or copies) should be accompanied by a cheque for $14.00 per copy, payable to Concordia University.

Number of Copies for a Master's Thesis. Three clean copies of the thesis must be submitted for all programs except the following: four copies for the M.A. in the Special Individualized Programs, Biology or Chemistry; and five copies for the M.Sc. in Administration and M.A. in Psychology. After graduation, three copies of the thesis will be bound. Two copies will be deposited in the University Library and one will be given to the student's department or Faculty. The cost of binding the three required copies is included in the graduation fee. If a student wishes to have any additional copies of the thesis bound for personal use, the copy (or copies) should be accompanied by a cheque for $14.00 per copy, payable to Concordia University.

Thesis-equivalent Material. If a thesis or thesis-equivalent consists in whole or in part of non-typescript material (film, slides, etc.), two copies of such non-typescript material must be submitted. In the case of the thesis-equivalent in Educational Technology, the student pays for the master videotape while the University supplies the viewing tape. The viewing videotape is erased after twelve months. The master tape forms a part of the library's permanent collection. For all non-conventional theses as described above, all typescript material must be submitted in three copies in the case of a master's thesis or six copies in the case of a doctoral thesis.

Scholarly Conventions. Theses shall be prepared in accordance with the conventions governing the presentation of scholarly work, as articulated in any of the following manuals: R.M. Wiles, *Scholarly Reporting in the Humanities,* 4th edition (Toronto: University of Toronto Press for the Humanities Research Council of Canada, 1972); K.L. Turabian, *A Manual for Writers of Term Papers, Theses, and Dissertations,* 6th edition (Chicago: University of Chicago Press, 1996); *The MLA Handbook for Writers of Research Papers*, Modern Language Association, 5th edition, New York, 1999; *Publication Manual of the American Psychological Association,* 5th edition, American Psychological Association, Washington, D.C., 2001; L. Fieser, *Style-Guide for Chemists* (New York, 1960); *AIP Style Manual for Physicists,* 4th edition, (New York: The American Institute of Physics, 1990); *A Manual for Authors of Mathematical Papers*, 5th edition, (Providence, Rhode Island: American Mathematical Society, 1973).

Page Format. The thesis must be submitted on letter-size paper, 8.5 x 11 inches. It must be double-spaced, in a standard type face, with a 1.5 inch (3.81 cm) left-hand margin and a 1 inch (2.54 cm) margin at the top, bottom and right. Please note that charts, tables, figures, appendices, references, and all other pages must conform to the required technical regulations.

Paper Quality. All copies submitted must be clear and dark and the typescript must be even, and maintain stipulated margins. **Final** copies of the thesis must be clean, on good quality cotton or linen content bond paper with watermark, mimimum 20 lbs, paper of good quality. It is not necessary to submit the original copy.

Page Numbering. Pages must be numbered consecutively, as must be chapters, sections, etc., in accordance with the above-mentioned style manuals, or with standard conventions used in technical work. Consistency in numbering must be maintained throughout the work (including Appendices).

Typographical Corrections. The thesis must be free from typographical errors. Corrections made in ink are not acceptable; nor is the use of opaquing fluid.

Boxes. The printed copies of the thesis should be placed in individual thesis boxes (available at the Bookstore or Copy Centre). Each box should be labelled with the student's name and program.

Technical, Scientific and Non-standard Theses. If students who find it necessary to depart from the form described in the above-mentioned style manuals, the format used must conform to standard usage in their field, and be acceptable to the supervisor. See specific rules as outlined in the *Thesis Preparation and Thesis Examination Regulations Booklet.*

Title and Signature Pages. A standard title page and signature page must be included, prepared in accordance with the examples set out in the *Thesis Preparation and Thesis Examination Regulations Booklet* available from the Thesis Office.

Doctoral Thesis Abstract. Each copy of the thesis must be accompanied by an abstract, with the title *Abstract*, name of author, title of thesis, the degree sought, *Concordia University*, and a summary not exceeding 350 words. The abstract should precede the Table of Contents. Please refer to the *Thesis Preparation and Thesis Examination Regulations Booklet* for a sample.

Master's Thesis Abstract. Each copy of the thesis must be accompanied by an abstract, typed on a separate single sheet, with the title *Abstract*, name of the author, title of the thesis, and a summary not exceeding 250 words. The abstract should precede the Table of Contents. Please refer to the *Thesis Preparation and Thesis Examination Regulations Booklet* for a sample.

Lay Abstract. All students are required to submit a lay version of their abstract by the final submission deadline to the Thesis Office. While not part of the formal thesis (i.e. it will not be included in the bound thesis), the lay abstract will be entered in the thesis database. The lay abstract should be written in plain language that is comprehensible to any interested nonspecialist in the field of study.

English and French Abstracts. In the case of theses written in a language other than English or French, a brief summary of the contents of the thesis, written in English or French, should be included with the abstract, this summary not to exceed 400 words.

Any deviations from the stated requirements must have the prior approval of the Dean of Graduate Studies. Theses which do not meet the outlined specifications will be returned for correction, with consequent delay in the granting of the degree. The Thesis Office is open throughout the year for consultation regarding thesis format. Students may also wish to consult the *Thesis Preparation and Examination Regulations Booklet* available from the School of Graduate Studies. These are available either from that office or from the student's department or Faculty.
Note*:* Students are advised not to follow the format of theses written in previous years since these do not necessarily meet the current standards.

Examination of Theses

Doctoral Theses

The doctoral thesis examination is the culmination of the candidates' research program. It exposes their work to scholarly criticism by members of the University, and gives students the opportunity to defend it.

When candidates give notice of their readiness to submit the thesis, the graduate studies committee of the candidate's program appoints an Examining Committee in consultation with the thesis supervisor. The Graduate Program Director forwards a doctoral examination form to the Thesis Office. This form lists the members of the examining committee, the name and address of the external examiner and the preferred date and time for the oral examination. A copy of the external examiner's C.V. must also be attached. In the John Molson School of Business and the Faculty of Engineering and Computer Science, the Graduate Studies Committee is a Faculty committee. The doctoral examination form for students in the Faculty of Engineering and Computer Science must be approved by the Faculty Associate Dean prior to being sent to the Thesis Office. In the Faculties of Arts and Science and Fine Arts, this committee is departmental. The Ph.D. in Humanities and the Special Individualized Programs are administered by a special subcommittee of the C.S.G.S.

The examining committee consists of at least five members, of whom at least one must be from a department or program within the university other than the candidate's (external-to-program examiner), and one from outside the University (external examiner). The candidate's supervisor is a member of the examining committee.

Any member of the examining committee who cannot attend the defence must submit a written report on the thesis with questions to be raised on the thesis to the Dean of Graduate Studies at least two weeks before the defence. The graduate studies committee will then appoint a delegate to raise these questions at the examination. The proxy examiner will assume the role of the absent member of the examining committee.

The student's program is responsible for verifying that the proposed date of examination is agreeable to all examiners prior to submitting the doctoral thesis examination form. When the six copies (seven copies for students in the Special Individualized Program) of the thesis are submitted to the Thesis Office, five are distributed to members of the examining committee and the sixth remains on deposit in the School of Graduate Studies, where it is available for examination by any member of the University from the date of submission until one week before the thesis defence. The thesis and the approved examination form should be submitted a minimum of six weeks prior to the expected date of defence to allow the thesis to be in the hands of the

external examiners at least one month before they are required to submit a report to the Dean of Graduate Studies.

The Thesis Office announces the upcoming examination by a notice which is posted at http://graduatestudies.concordia.ca/newsevents/doctoralexams.shtml Questions on a thesis by members of the University, other than those on the examining committee, must be submitted in writing to the Dean of Graduate Studies no later than one week before the thesis defence. The thesis defence is an oral examination conducted by a chair who shall be the Dean of Graduate Studies or a Pro-Dean, selected from a relevant discipline. Any member of the University is free to attend the oral examination.

The candidate first presents the thesis orally with whatever aids are required to make an effective presentation. The candidate is then questioned on the thesis. The chair will give priority to questions from members of the examining committee. Any member of the University who has submitted written criticism may be recognized by the Chair. The chair adjourns the examination when the examining committee decides that further questioning is unnecessary.

The chair presides over the examining committee during its deliberations in camera, but takes no part in the decision. The decision of the examining committee is based both on the thesis and on the candidate's ability to defend it. It is the responsibility of the chair to see that a report on the examination is prepared before the committee adjourns. This report will be made on a report form provided for this purpose, and will carry the signatures of all members of the examining committee, including the delegates of absent members. The written reports of absent readers, and of members of the examining committee who dissent from its decision, must accompany it. Where the chair has been a Pro-Dean, the chair's final responsibility is to report to the Dean of Graduate Studies on the conduct of the examination.

Four decisions are open to the examining committee, voting to be based on a simple majority. The thesis can be *accepted as submitted*, *accepted with minor modifications*, *accepted with major modifications*, or *rejected*. Minor modifications are defined as corrections which can be made immediately to the satisfaction of the supervisor. When a thesis is accepted with major modifications, a precise description of the modifications must be included in the examining committee's report along with a date for their completion. It is then the responsibility of the candidate's supervisor to demonstrate to the examining committee that the required modifications have been made. It is not necessary to reconvene the committee. The candidate's supervisor should inform the Thesis Office in writing that the modifications have been approved. When the thesis has been rejected, the candidate may not resubmit the thesis for six months from the date of the original defence. A rejected thesis may be submitted, in revised form, only once.

If the examining committee is not prepared to reach a decision concerning the thesis at the time of the thesis defence, it is the responsibility of its chair to determine what additional information is required by the committee to reach a decision, to arrange to obtain this information for the committee, and to call another meeting of the committee as soon as the required information is available. It is also the chair's responsibility to inform the candidate that the decision is pending. The candidate is not normally required to be present at the second meeting of the examining committee.

On the basis of the examining committee's report and its own records of the candidate's progress in their assigned program of study, the graduate studies committee decides whether the candidate has fulfilled the requirements of the doctoral degree. If its decision is yes, the committee requests that the Dean of Graduate Studies recommends to the Council of the School of Graduate Studies that the degree be awarded. If the Dean has any reason to feel that the acceptance of the thesis is open to dispute, the matter may be brought before the Council of the School of Graduate Studies. When the recommendation for the award of the doctoral degree has been made to Senate, the thesis is bound and two copies are deposited in the library, one is deposited in the department and one is sent to the supervisor.

Master's Theses

Upon receipt of the thesis from the Thesis Office, the graduate studies committee of the program in which the candidate is enrolled appoints an examining committee in consultation with the thesis supervisor. The examining committee consists of a minimum of three, and a maximum of five, members. The candidate's supervisor is a member of the examining committee. In programs where there is a thesis supervisory committee, any or all members may be named as members of the examining committee, subject to the policy of the program concerned. SIP students must have one external examiner on their committee. Students in the M.A.Sc. programs in Engineering must have an examiner from outside their department.

The defence normally shall be scheduled within a period of no fewer than two, and no more than five, weeks from the submission of the thesis. The parties concerned may agree upon a postponement.

The examining committee, and the thesis defence examination, will be chaired by a person appointed by the program graduate studies committee. The chair will act as a neutral person. Each member of the examining committee must submit a written report on the thesis to the chair before the defence. Any member of the University is free to attend a master's oral thesis defence. The chair will give priority to questions from members of the examining committee. Only members of the faculty of the University may be recognized by the chair. The chair adjourns the examination when the examining committee decides

that further questioning is unnecessary. The deliberations of the examining committee are held in camera, that is to say, only appointed members of the examining committee are present. It is the responsibility of the chair to see that a report on the examination is prepared before the committee adjourns. The examiner's evaluation forms and the examination report must be signed and returned to the Thesis Office.

Four decisions are open to the examining committee, voting to be based on a simple majority. The thesis can be *accepted as submitted*, *accepted with minor modifications*, *accepted with major modifications*, or *rejected*. Minor modifications are defined as corrections which can be made immediately to the satisfaction of the supervisor. Major modifications are defined as corrections requiring further research, or structural changes, or other substantive revision. When a thesis is accepted with major modifications, a precise description of the modifications must be included in the examining committee's report along with a date for their completion. It is then the responsibility of the candidate's supervisor to demonstrate to the examining committee that the required modifications have been made. The candidate's supervisor should inform the Thesis Office in writing that the modifications have been approved.

If the examining committee is not prepared to reach a decision concerning the thesis at the time of the thesis defence, it is the responsibility of the chair to determine what additional information is required by the committee to reach a decision, to arrange to obtain this information for the committee, and to call another meeting of the committee as soon as the required information is available. It is also the chair's responsibility to inform the candidate that the decision is pending.

Graduating Students

Graduating students must submit their thesis in its final format (i.e., all modifications completed) by **April 15** for Spring convocation or by **September 15** for Fall convocation. The student's program or department is responsible for ensuring that the examiner evaluation forms, the examination report and the completed signature sheets are forwarded to the Thesis Office by the above dates.

Re-submission of Theses

A thesis given a final grade of *Rejected* may be submitted only one more time in revised form, after an interval of six months or more from the date of the original defence. Formal re-submission of a thesis follows the same procedure as an initial submission.

Microfilming

At the time of submission of a thesis, students are required to complete a permission to microfilm form as part of their graduate requirements. This gives consent for the thesis to be microfilmed by the National Library in Ottawa. There is a $37.00 fee for this service and the student is billed for this as part of the graduation fee. This form must be on file in the Thesis Office at the time of final thesis submission.

Dissertation Abstracts International

All doctoral students' abstracts are printed in *Dissertation Abstracts International.*

Financial Regulations

The University reserves the right to modify the published scale of tuition, and other student fees without prior notice, at any time before the beginning of an academic term. The most current Tuition & Fees information is available at http://tuitionandfees.concordia.ca

Tuition and Other Fees

Master's and Ph.D. Programs

General

Master's and Ph.D. program students pay tuition and other fees based on the total number of academic credits in their program. The fees are charged in equal installments over a certain number of **Tuition Billing Cycle** terms irrespective of course registration.

Fees are charged at a fixed rate to all students currently enrolled in a Master's or Ph.D. program. The rate at which fees are billed is determined by the students' initial admission status (**full-** or **part-time**). Students who change from full-time to part-time status **before** they have completed half (1/2) of their Tuition Billing Terms will have the number of terms in their Tuition Billing Cycle and Academic Time-limit adjusted. Students who change from full-time to part-time status **after** they have completed half (1/2) of their Tuition Billing Terms will only have the number of terms in their Academic Time-limit adjusted.

Students who complete their Master's or Ph.D. program degree requirements before all tuition for their program of study has been billed will be charged the balance of their program's tuition & other fees once they apply for graduation.

Students who are required to take (extra) academic credits/courses in addition to the nominal academic credits in their program of enrolment will be charged a maximum of three credits of tuition and other fees per term until all the "course deficiency" (academic) credits have been billed. Students who have been awarded a fee remission will be charged at an accelerated rate (equivalent of 11.25 credits per term) over fewer terms so as to take full advantage of the award.

Once students have been billed all the tuition and other fees for their program, they will be charged **Continuation and other fees** every term until they graduate from their program. Once students have reached their **Academic Time-limit** and if they have been granted **a Time-limit Extension (TLE)**, they will be charged **Time-limit Extension** and other fees for every term of the TLE.

Permanent Code Penalty. Effective Fall 2000, all registered Québec university students must have a "code permanent" which is issued by the Québec Ministry of Education. Students who do not have a code permanent must submit a form and supporting documentation to Enrolment Services. If the required documents are not submitted within the prescribed deadline, full-time students will be charged additional $2,392.50 per term of Tuition and $1,914 per term for part-time students. Further information, including a copy of the Permanent Code Data form, is available at:
http://registrar.concordia.ca/cqf/codeperm.htm

Graduate Level	Master's			Ph.D.
Total Academic Credits	45	57	60	90

Total Number of Terms	Full-time Students			
Tuition & Other Fees Billing Cycle	6	6	8	12
Continuation Fees Billing Cycle	6	3	4	6
Academic Time-limit	12	9	12	18

Total Number of Terms	Part-time Students			
Tuition & Other Fees Billing Cycle	8	10	10	15
Continuation Fees Billing Cycle	7	5	5	9
Academic Time-limit	15	15	15	24

Fees

Graduate Level	Master's Regular Program		Ph.D. Regular Program	
Enrolment Status	**F/T**	**P/T**	**F/T**	**P/T**
Québec Residents[1]				
Tuition Fees	$ 417.08	$ 333.66	$ 417.08	$ 333.66
Other Fees	$ 173.15	$ 142.52	$ 173.15	$ 142.52
Student Association Fee[2]	$ 124.28	$ 124.28	$ 124.28	$ 124.28
Student Health & Dental Plan[3]	$ 257.16	$ 257.16	$ 257.16	$ 257.16
New Student Program Fee	$ 35.00	$ 25.00	$ 35.00	$ 25.00
Total per Term	$1,006.67	$ 882.62	$1,006.67	$ 882.62
Canadian,Non-Québec Residents[4]				
Tuition Fees	$1,162.73	$ 930.18	$ 417.08	$ 333.66
Other Fees	$ 173.15	$ 142.52	$ 173.15	$ 142.52
Student Association Fee[2]	$ 124.28	$ 124.28	$ 124.28	$ 124.28
Student Health & Dental Plan[3]	$ 257.16	$ 257.16	$ 257.16	$ 257.16
New Student Program Fee	$ 35.00	$ 25.00	$ 35.00	$ 25.00
Total per Term	$1,752.32	$1,479.14	$1,006.67	$ 882.62
International Students[5]				
John Molson School of Business				
Tuition Fees	$3,000.00	$2,400.00		
Other Fees	$ 173.15	$ 142.52	Not	Not
Student Association Fee[1]	$ 124.28	$ 124.28	Applicable	Applicable
International Health Insurance[4]	$ 480.00	$ 480.00		
New Student Program Fee	$ 35.00	$ 25.00		
Total per Term	$3,805.23	$3,164.60		
Other Programs[5]				
Tuition Fees	$2,517.08	$2,013.66	$2,269.58	$1,815.66
Other Fees	$ 173.15	$ 142.52	$ 173.15	$ 142.52
Student Association Fee[2]	$ 89.78	$ 89.78	$ 89.78	$ 89.78
International Health Insurance[6]	$ 480.00	$ 480.00	$ 480.00	$ 480.00
New Student Program Fee	$ 35.00	$ 25.00	$ 35.00	$ 25.00
Total per Term	$3,295.01	$2,750.96	$3,047.51	$2,552.96

1 Please see the Graduate Calendar for information regarding the Government of Québec's rules for determining Québec residency.

2 The Graduate Student Association fee of $57.28 is charged to all Graduate students once per year, in the Fall or Winter semester. Your student association membership is determined by your program of enrolment and is charged in addition to the Graduate Student Association fee. Graduate Commerce Association Fee - $67.00 per year; Graduate Engineering & Computer Science Association fee - $32.50 per year.

3 This is an annual fee that is pro-rated and charged in two installments: $85.72 in the Fall term; and $171.44 in the Winter term Please refer to the section on "Other Fees" for further information, opt-out rules and opt-out deadlines.

4 The Government of Québec requires the University to collect the following premiums:
$ 99.42 per credit for all Non-Québec residents (except Ph.D. students)

5 The Government of Québec requires the University to collect the following premiums:
$ 280 per credit for International students enrolled in a Master's program
$ 247 per credit for International students enrolled in a Ph.D. program

6 This is an annual fee that is charged in one instalment: $480 for Fall, Winter and Summer coverage; $399 for Winter and Summer coverage and $253 for Summer coverage. Please contact the International Students Office for information regarding exemption rules and deadlines.

Continuation and Time-Limit Extension Fees

Continuation & Other Fees for Master's & Ph.D. Programs	Students admitted 1999/1 & later	Students admitted prior to 1999/1
Canadian Students		
Continuation Fee	$ 400.00	$ 75.00
Registration Fee	$ 20.00	$ 20.00
Student Association Fee	$ 124.28	$ 124.28
Student Health & Dental Plan	$ 257.16	$ 257.16
Total per Term	$ 801.44	$ 476.44
International Students		
Continuation Fee	$ 400.00	$ 75.00
Registration Fee	$ 20.00	$ 20.00
Student Association Fee	$ 124.28	$ 124.28
International Health Insurance	$ 480.00	$ 480.00
Total per Term	$1,024.28	$ 699.28

Time-Limit Extension & Other Fees for Master's and Ph.D. Programs		
	Canadian Students	*International Students*
Time-Limit Extension Fee	$ 600.00	$ 600.00
Registration Fee	$ 20.00	$ 20.00
Student Association Fee	$ 124.28	$ 124.28
Health Insurance	$ 257.16	$ 480.00
Total per Term	$1,001.44	$1,224.28

Graduate Certificate and Diploma Program, Independent and Visiting/Exchange[2] Students

Canadian and other students with Permanent Residence (Landed Immigrant) status:

Québec residents †	$ 55.61 per credit
Non-Québec residents ‡	$155.03 per credit

† *The Government of Québec sets the rules for determining residency. Please contact the Office of the Registrar (514-848-2424 ext. 2668) for more information.*

‡ *The non-Québec resident rate includes a $99.42 per credit premium that must be collected for the Government of Québec. Please contact the Office of the Registrar (514-848-2424 ext. 2668) for more information.*

[2] Visiting/Exchange students whose host university is Concordia and who pay fees to their home university.

* International students enrolled in Graduate Diploma or Certificate programs offered by the John Molson School of Business program
$ 400.00 per credit

* International students enrolled in other Graduate Diploma or Certificate programs (includes Government premium of $280 per credit)
$ 335.61 per credit

* *Certain international students may be eligible to pay the same tuition fees as Canadian students. Details may be obtained from the School of Graduate Studies or the Office of the Registrar.*

Permanent Code Penalty
Effective Fall 2000, all registered Québec university students must have a "code permanent" which is issued by the Québec Ministry of Education. Students who do not have a permanent code must submit a form and supporting documentation to Enrolment Services. If the required documents are not submitted within the prescribed deadline, students will be charged an additional $319 per credit of tuition. Further information, including a copy of the form, is available at:
http://registrar.concordia.ca/cqf/codeperm.htm

Qualifying Program and Other Undergraduate Course Registrations. Students must pay the appropriate undergraduate fees when taking an undergraduate course that is not considered part of their graduate degree requirements (i.e. as defined by the student's program director and/or advisory committee).

Administrative Fee $ 9.00 per credit
Students in financial need may apply for an Administrative Fee Bursary. Applications for the *Administrative Fee Bursary* are submitted on-line through the student portal at www.MyConcordia.ca – go to the Financial pagelet, select Financial Aid & Awards, select Web Applications, select New Application, select Administrative Fee Bursary and complete the on-line application form.

Student Service Fee $ 6.90 per credit

Recreation & Athletics Fee $ 2.52 per credit

Capital Campaign Fee $ 2.00 per credit
(up to a maximum of $30 per term)
On March 19, 1997, the University's Board of Governors ratified a motion presented by student leaders that introduced a mandatory Capital Campaign Fee for all students. While the fee is mandatory, the University and student leaders are aware and sensitive to the possibility that some students may be in difficult financial circumstances and consequently should be exempted from paying the Capital Campaign Fee. Students in financial need may apply for a Capital Campaign Fee Exemption. Applications for the *Capital Campaign Fee*

Exemption are submitted on-line through the student portal at www.MyConcordia.ca – go to the Financial pagelet, select Financial Aid & Awards, select Web Applications, select New Application, select Capital Campaign Exemption and complete the on-line application form.

Registration Fee $ 20.00 per term

Co-operative Education Fee $185.00 per term
This fee is charged to students participating in an Institute for Co-operative Education work/study program in addition to tuition and other fees.

Continuation Fee $400.00 per term
Once students have been billed all of the tuition and other fees for their program, they will be charged a Continuation fee plus miscellaneous fees every term until they graduate from their program or officially withdraw from their program, or until their Academic Time Limit expires. This fee is only charged to students in a Master's/Magisteriate or Ph.D. Program. Students admitted to a Master's or Ph.D. program prior to Summer 1999 (99/1) are charged a Continuation fee of $75.00 per term.

Time-limit Extension Fee $600.00 per term
Under exceptional circumstances, a student may apply for a program time-limit extension. If the extension is approved by the School of Graduate Studies, a time-limit extension fee plus miscellaneous fees are charged.

Leave of Absence Service Fee $150.00 per term
Students granted leaves of absence with access to university services are charged a service fee.

Graduate Association Fee

Faculty of Arts & Science, Fine Arts & Independent Students	$ 57.28 per year*
John Molson School of Business Students	$ 124.28 per year*
Faculty of Engineering & Computer Science	$ 89.78 per year*

*Fees include:	A&S	F.A.	IND	JMSB	E&CS
Graduate Student Association Fee	$43.24	43.24	43.24	43.24	43.24
Canadian Federation of Students Fee	$ 6.84	6.84	6.84	6.84	6.84
Canadian Federation of Students – Quebec Fee	$ 7.20	7.20	7.20	7.20	7.20
Faculty Student Association Fee				37.00	32.50

*Fees include: (cont'd)	A&S	F.A.	IND	JMSB	E&CS
Commerce Career Placement Center Fee				30.00	
TOTAL	$57.28	$57.28	$57.28	$124.28	$89.78

Health Insurance $480.00 per year
(*for International students*)

At Fall registration	$ 480	12 months/3 terms of coverage
At Winter registration	$ 399	8 months/2 terms of coverage
At Summer registration	$ 253	4 months/1 term of coverage

Note: Students possessing Québec Medicare cards or certain private insurance coverage may apply for an exemption. Further information is available from the International Student Office (ISO), H-653.

Student Health & Dental Care Plan $ 257.16 per year
(*except International students*)

Coverage	*Sept-Dec*	*Jan-Aug*	*Sept-Aug*
Health & Dental Plan	$ 85.72	$ 171.44	$ 257.16
Health Plan Only	$ 43.66	$ 87.32	$ 130.98
Dental Plan Only	$ 42.06	$ 84.12	$ 126.18

Students can opt out of the Student Health and/or Dental Care Plan by visiting www.aseq.com and completing the on-line opt-out process during the opt-out period. Students who are registered in Fall (/2) or Fall/Winter (/3) term courses must opt out between the first day of Fall-term classes and the Fall-term DNE deadline (September 5 – 19, 2006). Students enrolled in Fall (/2) or Winter (/3) term courses **may not opt out** after the September deadline or during the Winter-term opt-out period. Students who are registered in Winter (/4) term courses only must opt out between the first day of Winter-term classes and the Winter-term DNE deadline (January 3 - 17, 2007). For information regarding the plans, please contact the Québec Student Health Alliance (ASEQ) 514-844-4423.

New Student Program Fee *(charged at initial registration for new students only)*
Full-time students $ 35.00 Part-time students $ 25.00

Residential Laboratory Fee $481.50 per course
(charged on all AHSC 610 & AHSC 680 courses)

Other fees billed on course deficiencies. Students who are required to take (extra) academic credits/courses in addition to the nominal academic credits in their program of enrolment will be charged a maximum of 3 credits of tuition (and other fees) per term until all the "course deficiencies" (academic) credits have been billed.

Miscellaneous Fees

Application Fee	50.00
Academic Re-evaluation Fee	15.00
Acknowledgement of Payment (receipt)	1.00
Admission Deferral Fee	25.00
Computer Account (Paper Fee)	3.50
Confirmation Fee (non-refundable deposit)	100.00
Course Descriptions (maximum $25)	5.00 per academic year
Course Re-evaluation Processing Fee	15.00
Degree (mailing of degree)	15.00
Degree (certification of copy)	3.00
Degree (replacement degree)	50.00
Duplicate Receipt	2.00
Fax Fee (for each 10 pages or less, excluding cover sheet)	10.00
Graduation Fees	
Ph.D. Graduation Fee (includes thesis binding and microfilming)	86.00
Master's Degree Graduation Fee – thesis option (includes thesis binding and microfilming)	72.00
Master's Degree Graduation Fee - non-thesis option	40.00
Diploma Program Graduation Fee	40.00
Certificate Program Graduation Fee	40.00
Fee for re-submission of doctoral thesis	50.00
Fee for re-submission of master's thesis	25.00
Late Application to Graduate	15.00
Handling Charge on Returned Items (e.g. Returned Cheque)	20.00
Late Registration Fee	25.00
Letter of Attestation or Attestation Form	10.00
Letter of Financial Standing	10.00
Locker Rental Fees	
Summer Term	
All buildings except EV (Engineering, Computer Science & Visual Arts) Bldg.	12.00
EV Bldg.	
Half Locker	6.00
Full Locker	10.00
Custom Locker	10.00
Fall/Winter Term	
All buildings except EV (Engineering, Computer Science & Visual Arts) Bldg.	20.00

Miscellaneous Fees (cont'd)

EV Bldg.	
Half Locker	12.00
Full Locker	20.00
Custom Locker	20.00
Parking (Loyola Campus)	65.00 per term
Residence Rent (September – April)	
Application Fee (non-refundable deposit)	100.00
Single Room	355.28 per month
Double Room	304.19 per month
Activity Fee	8.75 per month
Student Identification Card	
First Identification Card	11.50
Replacement Identification Card	11.50
Student Record (copy of)	3.00
Transcript of Academic Record (per address-max 3 copies) - includes $3 for student copy – see Fax Fee if applicable	9.00
Tuition Receipts for educational tax credit (no charge for first set)	12.00
University Calendar (no charge for first copy)	7.00
U-Print Solutions (laser printer copies)	
Black & White; single & duplex	0.15 per copy
Colour; single & duplex	0.75 per copy

Fee Payment Policy

Financial Obligations for all Graduate Students (Certificate, Diploma, Qualifying, Master's/Magisteriate, and Ph.D. program students; Independent & Visiting/Exchange Students)

Once a student registers for a course(s) or enrols in a Master's or Ph.D. program, he/she is responsible for payment of the resulting fees. Students are required to make payment when fees become due. Student account balances are available on the student portal at www.MyConcordia.ca the moment a student registers for a course(s), or enrols in a Master's or Ph.D. program. Payment deadline dates follow in this section of this Calendar. No printed invoices or statements of account will be issued by the University.

Accounts & Registration Restrictions. In order to register, and remain registered in future terms, the student's account must be in good standing (paid in full). All monies owing to the University (such as tuition and other fees, residence rent, emergency loans, library fines, etc.) must be paid when they become due.

Students with overdue or delinquent accounts are not permitted to register or re-register until payment or satisfactory payment arrangements have been made with the Student Accounts Office (see payment deadlines below). Course registrations in future terms will be cancelled if registered students do not make payment when fees become due. However, **current registrations will not automatically be cancelled for non-payment of a student's account.**

Other Accounts Restrictions. Failure to make payment, or to arrange satisfactory payment settlement of amounts owing to the University when they become due is sufficient cause to bar the student from classes or examinations, and to withhold diplomas, scholastic certificates, or transcripts of record until the debt is adjusted with the University.

Student Account Balance. Once a student registers for a course(s), or enrols in a Master's or Ph.D. program, he/she is responsible for payment of the resulting fees. Students are required to make payment when fees become due. Student account balances are available on the student portal at www.MyConcordia.ca the moment a student registers for a course(s), or enrols in a Master's or Ph.D. program. Payment deadline dates follow in this section of this Calendar. No printed invoices or statements of account will be issued by the University.

Methods of Payment. The University will not accept cash for the payment of student tuition and other fees. Payments can be made by debit card (Interac), MasterCard, Visa, certified cheque, money order or personal cheque. With a payment stub, payments can be made at any chartered bank or automatic teller machine in Canada. Payments can also be made through most Canadian banking institutions' telephone and Web payment services; and, through Concordia University's On-Line Credit Card Payment Service available on the Financial Page of the Student Portal (http://www.myconcordia.ca/).

Payment Arrangements. Students encountering difficulties meeting their financial obligations with regard to outstanding balances on their student account should contact the Student Accounts Office, Hall Building, Room H-541, (514-848-2424 ext. 4900) **before the payment deadline date.**

Other Methods of Payment (Payment Arrangements)

- Students who are receiving government loans and/or bursaries may be eligible to receive a *Tuition & Other Fees Deferral Contract*. Contact the Financial Aid and Awards Office (S-LB-085) for further information.
- Students whose *"Sponsor"* (e.g. government, embassy, corporation) is paying 100% of their tuition and other fees directly to Concordia University must present original proof of sponsorship to the Student Accounts Office before the payment deadline date.

- University employees may be eligible for *Employee Tuition Waivers*. These are obtained from the Human Resources Office (S-ER-500) at least one or two days before a payment becomes due. The waiver must be processed to the student's account prior to the payment deadline; otherwise, interest will be charged on the total outstanding balance (including portion that will be covered by the Tuition Waiver).
  Please note that Employee Tuition Waivers cover only the tuition base rate for university credit courses. Non-Québec Resident and International Student premiums and compulsory fees are not covered by an Employee Tuition Waiver. All fees (except base tuition) must be paid by the student by the payment deadline date.
- *Payroll Deductions* may be available to teaching and research assistants and certain Concordia employees. Further information and Payroll Deduction forms are available at the Payroll Office (S-ER-500).

Payment arrangements **do not supersede** the University's tuition and other fees payment policies with regard to the assessment of interest charges, the release of transcripts, student records, degrees, diplomas, or other official records, or permission to register in future terms. In addition, students will not be permitted to register for additional courses or future academic terms until all current amounts due are paid in full. Interest charges are assessed on all outstanding balances (and deferred balances) regardless of whether or not a payment arrangement has been made with the Student Accounts Office.

The Student Accounts Office reserves the right to cancel a **current** registration if payment arrangements are not honoured. However, current registrations **will not automatically** be cancelled for non-payment of a student's account.

Miscellaneous fees/charges. Miscellaneous fees (e.g. interest charges, locker fees, fines, etc.) are due 30 days from the date that the charge is posted to the student's account. After that date, interest charges will be applied to unpaid balances.

Adjustments to Accounts. All accounts are subject to revision for changes to the published scale of fees (which may be made without prior notice at or before the beginning of an academic term), registrations of record and for the adjustment of errors or omissions, as well as in the case of courses cancelled by the University.

Returned Items (Cheques, Credit Card Payments). Current and/or future registrations **may** be cancelled if a cheque or credit card payment is returned for any reason. A $20 processing fee will be charged for each returned item.

Delinquent Accounts Delinquent accounts are managed as follows:

1. **Interest.** Interest is charged on all outstanding balances at the rate of 8% per annum. This rate may change from time to time in conformity with prevailing interest rates. Monthly interest is charged on unpaid fees for the:
   - Summer term beginning May 31
   - Fall term beginning September 30
   - Winter term beginning January 31

2. **Collection.** The Student Accounts Office will
   a. send an e-mail to the student's e-mail address on record as a reminder that the student's account has become delinquent and that the account will be placed with a collection agency if payment is not received within a specified period of time; or
   b. send a letter to the student's mailing address on record as a reminder that the student's account has become delinquent and that the account will be placed with a collection agency if payment is not received within a specified period of time; and
   c. place the account with a collection agency if payment has not been received within the period of time noted on both the e-mail and letter reminders.

   The University reserves the right to proceed by way of legal action.

Fee Payment Deadlines for Master's/Magisteriate and Ph.D. programs

Term	Fees Due	Interest Charged Beginning
Summer term	May 31, 2006 (without interest)	May 31, 2006
	August 1, 2006 (with interest)	May 31, 2006
Fall term	September 19, 2006	September 30, 2006
Winter term	January 17, 2007	January 31, 2007

Payment Deadlines for Graduate Certificate, Diploma and Qualifying programs; Independent & Visiting/Exchange students

Academic Term	Payment must be Received No Later Than	Consequences if Payment Not Received by the FINAL Payment Deadline
2006 / 1 Summer Courses May – August	100% of Summer Fees (/1 courses) are due on May 31, 2006 (without interest) August 1, 2006 (with interest)	August 1, 2006 Cancellation of all courses beginning with the next Fall term (all /2, /3 and /4 courses) Monthly Interest Charges are applied to unpaid Summer Course fees beginning May 31.

2006 / 2 Fall Courses September - December	100% of Fall Fees (/2 courses) are due on September 19, 2006	Cancellation of all courses beginning with the next Winter term (/4 courses) Monthly Interest Charges are applied to unpaid Fall Course fees beginning September 30.
2006 / 3 Fall/Winter Courses September - April	50% of Fall/Winter Fees (/3 courses) are due on September 19, 2006	Cancellation of all courses beginning with the next Winter term (/4 courses) Monthly Interest Charges are applied to unpaid Fall portion of /3 Course fees beginning September 30.
	Balance of Fall/Winter Fees (/3 courses) are due on January 17, 2007	NO registration for future academic sessions will be permitted until all overdue accounts are paid in full. **NOTE**: The DNE deadline for /3 courses is September 19, 2006 and **NOT** January 17, 2007 Monthly Interest Charges are applied to unpaid Winter portion of /3 Course fees beginning January 31.
2006 / 4 Winter Courses January – April	100% of Winter Fees (/4 courses) are due on January 17, 2007	NO registration for future academic sessions will be permitted until all overdue accounts are paid in full. Monthly Interest Charges are applied to unpaid Winter Course fees beginning January 31.

Withdrawals and Tuition Refunds/Financial Credits Policy

No refund will be granted for any course(s) for which the student has or will receive a grade (including a "discontinued" grade notation). Requests for official withdrawal from a graduate program or from a course(s) must be done in person at the Graduate Program office.

Certificate, Diploma, and Qualifying Program Students; and Independent & Visiting/Exchange Students

A full refund of tuition, or financial credit, will be granted to students who officially withdraw from a course(s) in writing (by registered letter) to Enrolment Services or in-person at the Birks Student Service Centre prior to the DNE withdrawal deadline date(s). Some graduate students may also officially withdraw from a course(s) via the student portal at

www.MyConcordia.ca, on the Registration pagelet. When dropping a course(s) on the Registration pagelet, students must make sure to confirm the transaction and/or verify their student record to make sure that the course was indeed dropped.

When a course(s) is not dropped on or before the DNE deadline, the student will be held financially responsible for all resulting tuition and other fees. Not attending classes, not paying tuition, or simply informing the instructor of one's intent to withdraw does not constitute official withdrawal, nor does it entitle a student to a refund of fees, financial credit of fees, or cancellation of a registration. There is no refund for any course(s) dropped after the DNE withdrawal deadline date. **Tuition and all other fees charged for previous academic terms are non-refundable.**

In the event that a student has not made payment for these fees at the time of withdrawal from a course(s), the student will be held financially responsible for the payment of those outstanding fees if a course(s) is dropped after the DNE withdrawal deadline date (including Time-Limit Extension Fees).

	Deadline to Withdraw from Courses ~With Refund~ (DNE)	**Academic Withdrawal Deadline with ~No Refund~ (DISC)**
Summer (/1) courses	varies by course*	varies by course*
Fall (/2) courses	September 19, 2006	October 31, 2006
Fall/Winter (/3) courses	September 19, 2006	March 7, 2007
Winter (/4) courses	January 17, 2007	March 7, 2007

* See GPD for exact dates

Master's/Magisteriate and Ph.D. Program Students

Once a student has enrolled in a Master's/Magisteriate or Ph.D. program, he/she is responsible for the payment of the resulting fees, irrespective of their registration of record (e.g. whether or not the student is registered for a course). Students are required to make payment when fees become due whether or not they have received an invoice or statement of account.

Withdrawals - Tuition Credits/Refunds. A full refund of tuition, or financial credit, will be granted to students who officially withdraw from their program of study. Students should contact their Graduate Program Director prior to the prescribed deadline for withdrawal from program. Please note that not attending classes, not paying tuition, or simply informing the instructor of one's intent to withdraw does not constitute official withdrawal, nor does it entitle a student to a refund of fees, financial credit of fees, or cancellation of a registration.

Please refer to the section outlining Withdrawals and Refunds (for Master's/Magisteriate or Ph.D. program students) for more information.

When a student fails to withdraw from a Master's/Magisteriate or Ph.D. program within the prescribed deadline, the student will be held financially responsible for all resulting tuition and other fees whether or not the student attended or stopped attending class. **No partial refunds (or financial credits) can be granted.** In the event that a student has not yet made payment and withdraws after the prescribed deadline, the student will be held financially responsible for the payment of the resulting fees.

General

No refund will be granted for any course(s) for which the student has or will receive a grade.

Official withdrawal from a program or from a course(s) must be done in person at the Graduate Program office.

Withdrawal Deadlines for Students in Graduate Certificate, Diploma and Qualifying programs and Independent & Visiting/Exchange Students

Students who withdraw from a course(s) must comply with the requirements set out in the section on *Withdrawals*, Graduate Registration section, Graduate Calendar in order to qualify for a refund of tuition. Students who officially withdraw from a course(s) within the prescribed withdrawal (DNE) deadline will receive a full refund (or financial credit on their student account) of the fees. There is no refund for any courses dropped after the DNE deadline date. Tuition and all other fees charged for previous academic terms are **non-refundable.**

In the event that students have not yet made payment for these fees, students will be held financially responsible if they do not withdraw from a course(s) on or before the prescribed withdrawal (DNE) deadline (including Time-limit Extension Fees).

	Deadline to Withdraw from Courses ~With Refund~ (DNE)	**Academic Withdrawal Deadline with ~No Refund~ (DISC)**
Summer (/1) courses	varies by course*	varies by course*
Fall (/2) courses	September 19, 2006	October 31, 2006
Fall/Winter (/3) courses	September 19, 2006	March 7, 2007
Winter (/4) courses	January 17, 2007	March 7, 2007

* See GPD for exact dates

Tuition Refund Request Committee

Students in Graduate Certificate, Diploma and Qualifying programs, and Independent, Visiting and Exchange students may apply to the Tuition Refund Request Committee for exceptions to the rules governing the refund of tuition fees.

1. The Tuition Refund Request Committee (the Committee) considers requests from full-time or part-time students for exceptions to the rules governing the refund of tuition fees.
2. A refund request shall be made on a *Tuition Refund Request* form on the Tuition and Fees Web site. A request with respect to a Fall-term course must be made no later than the following February 1; with respect to a Fall/Winter or Winter-term course, no later than the following June 15, and with respect to a Summer-term course, no later than the following October 1. These deadlines may be extended by the Committee in particular cases if the student can provide evidence that he or she was unable to have acted within the deadlines.
3. The Committee shall be composed of four members: a Chair appointed by the Provost, a representative from the Student Accounts Office, a representative from the Office of the Registrar, and a student representative.
4. The Committee shall render a decision, based on the written record only, normally within thirty (30) working days of receiving the request. The Committee may reject the request, grant a partial refund or a complete refund. No refunds may be granted unless the student has officially withdrawn from the course(s) in question. The decision of the Committee is final.

Withdrawal Deadlines for Students in Master's/Magisteriate or Ph.D. Programs

Withdrawal from a course(s) does not constitute official withdrawal from a Master's/Magisteriate or Ph.D. program. Students who officially withdraw from a Master's/Magisteriate or Ph.D. program within the prescribed withdrawal deadline will receive a full refund (or financial credit on their student account) of the fees for the current term. Students must submit their official request to withdraw from their program to the Graduate Program Director prior to the withdrawal date(s).

Tuition and all other fees charged for previous academic terms are <u>non-refundable</u> (including Continuation and Time-limit Extension Fees). Students who have not officially withdrawn from their program of study will continue to be billed tuition and other fees each term.

In the event that students have not yet made payment for these fees, students will be held financially responsible if they do not withdraw from their program of study on or before the prescribed withdrawal (DNE) deadline.

	Deadline to Withdraw from program ~With Refund~	**Course Withdrawal (DNE) Deadline ~No Refund~**	**Academic Course Withdrawal (DISC) Deadline ~No Refund~**
Summer term	May 1, 2006	varies by course*	varies by course*
Fall term	September 19, 2006	September 19, 2006	October 31, 2006
Winter term	January 17, 2007	January 17, 2007	March 7, 2007

* See GPD for exact dates

After the deadlines to withdraw from a program, no exceptional refunds are available for students in programs which charge fixed fees over a specific number of Tuition Billing Cycle terms (Master's and Ph.D. programs). All requests related to tuition refunds must be submitted as Student Requests through the Graduate Program Director.

Tuition Refund Request Committee

Students in Graduate Master's and Ph.D. programs may apply to the Tuition Refund Request Committee for exceptions to the rules governing the refund of tuition fees.

1. The Tuition Refund Request Committee (the Committee) considers requests from full-time or part-time students for exceptions to the rules governing the refund of tuition fees.
2. A refund request shall be made on a *Tuition Refund Request* form on the Tuition and Fees Web site. A request with respect to a Fall-term fees must be made no later than the following February 1; with respect to a Fall/Winter or Winter-term fees, no later than the following June 15, and with respect to a Summer-term fees, no later than the following October 1. These deadlines may be extended by the Committee in particular cases if the student can provide evidence that he or she was unable to have acted within the deadlines.
3. The Committee shall be composed of four members: a Chair appointed by the Provost, a representative from the Student Accounts Office, a representative from the Office of the Registrar, and a student representative.
4. The Committee shall render a decision, based on the written record only, normally within thirty (30) working days of receiving the request. The Committee may reject the request, grant a partial refund or a complete refund. No refunds may be granted unless the student has

officially withdrawn from their program of study. The decision of the Committee is final.

Executive MBA, the International Aviation MBA, Global Aviation MBA, Master's in Investment Management and Diploma in Investment Management Programs

Special withdrawal deadlines and procedures govern students in the programs listed above. For further information, please contact the respective office.

Option Changes

When students are granted an option change, their program time limit and tuition fee billing cycles are not adjusted. The academic time limit and billing cycles are not extended and continue to be counted from term of admission to the original program of study. All tuition and other fees paid in the original option are transferable to the new program of study and are not forfeited.

This rule also applies to students changing between the following programs if registration is continuous and in consecutive terms:

- the Master's of Engineering and the Master's in Applied Science programs in the same concentration in the Faculty of Engineering & Computer Science
- the Master's of Engineering and the Master's in Applied Science programs in Building and Civil engineering,
- the Master of Computer Science and the Master of Applied Computer Science programs in the Faculty of Engineering and Computer Science
- Diploma in Administration (DIA) to the Master's in Business Administration (MBA) for a maximum of 24 credits
- Diploma in Sports Administration (DSA) to the Master's in Business Administration for a maximum of 24 credits.

Special Degree Transfers (New Admissions) from another University

When a Graduate student transfers to a Concordia Master's thesis or Ph.D. program to continue graduate work started at another institution, financial credit equal to the number of academic transfer (pro-tanto) credits awarded will be granted to the student.

International Students

There are approximately 4,400 foreign students from over 130 countries studying at Concordia University. In this section, international students will find relevant information on immigration regulations and tuition fees. Further information and assistance can be obtained from the International Students Office, in the Hall Building, room 653, telephone: 848-2424 ext. 3515; e-mail: iso@alcor.concordia.ca

The International Students Office, a member of Enrolment and Student Services, Support Services, is responsible for providing programs and services which are responsive to, and supportive of the International students' special needs. The services include:

- orientation sessions for new students;
- assistance for students with personal and academic difficulties;
- guidance in cultural integration/adaptation;
- health insurance plan;
- information on all campus and community services available to International students;
- assistance with immigration procedures, rules and regulations;
- short-term emergency loans;
- letters for military deferment, transfer of funds, and immigration invitation/visitation letters;
- liaison with sponsoring agencies and governmental sponsors of students.

Upon arrival at Concordia University, new international students must attend an Orientation Session organized by the International Students Office, in order to pick up their Information Package on Concordia and the City of Montréal; attend an Insurance Information Session and sign up for a Health Insurance card, or in exceptional cases, opt-out of the health insurance plan. For further details, see section on International Student Health and Accident Insurance. It is essential that International students bring copies of their immigration documents and/or passport to the International Students Office.

Immigration Procedures

All persons, other than Canadian citizens and Landed immigrants, who wish to pursue their studies in the province of Québec, must obtain a Québec Certificate of Acceptance (CAQ) and a Canada Study Permit. However, if your program of study is six months or less in duration you have the option of studying in Canada without having to apply for a CAQ or Study Permit, provided you complete your studies within the authorized period of your stay in Canada. This regulation may be of particular interest to a visiting student, exchange student, or any other student whose program of study will not exceed six months

and which can be completed within the allowable period of their stay in Canada.

The CAQ is issued by the Québec Immigration authorities and the Study Permit by the Visa Departments of the Canadian Consulates and Embassies. Certain categories of students may be exempt from applying for a CAQ and a Study Permit. The Canadian Consulate/Embassy will advise whether or not a CAQ and a Study Permit is required. As it may take over a month to obtain both the CAQ and the Study Permit, the application process should be started immediately upon receipt of the letter of admission from Concordia University.

For further information, please consult the *Information Guide for International Students* available at the International Students Office website: http://supportservices.concordia.ca/iso.

Students will receive an Information Guide with their letter of admission. This guide will outline the procedures to take in obtaining their CAQ and Study Permit. When applying for the CAQ and the Study Permit, the international student will be required to present evidence of sufficient funds for tuition and living expenses.

Evidence of financial support may be:

- an updated bank book with proof of ownership, and if necessary, documents attesting to other sources of income;
- a sworn declaration of financial support, accompanied by proof of sufficient funds from the Canadian or foreign sponsor for the current year, if applicable;
- an authorization to transfer funds from the organization which controls currency in the student's country, if applicable;
- a bursary attestation, or confirmation of a financial award, specifying the monthly or annual amount, if applicable.
- offers of employment such as research and/or teaching assistants, if applicable.

Students are advised to ensure that they will have sufficient funding to complete their degree. **Concordia University cannot assume financial responsibility for students who do not have adequate funds.**

Processing fees will be charged by both Québec and Canada Immigration for the issuance of a *Québec Certificate of Acceptance* and a *Study Permit*.

Studying for Six Months or Less

If your program of study is for six months or less and can be completed within the allowable period of your stay in Canada, you need only apply for a Temporary Resident Visa if you reside in a country that requires such a

document to enter Canada, no other document is necessary. Despite the regulation, foreign nationals may still opt to apply for a CAQ and a Study Permit if they wish to get these documents. Further information may be obtained by the Visa Departments of the Canadian Consulate and Embassy in your country. A list of Canadian Representatives abroad is available through the following website: http://www.dfait-maeci.gc.ca/world/embassies/cra-en.asp

Documentation Required for the University

International students are required to provide a copy of their CAQ and Study Permit to the International Students Office, 1455 de Maisonneuve West, Hall Building, 6th floor, Room 653, when they first register at Concordia and thereafter every time they renew their immigration documents. International students who will be studying for six months or less are required to submit photocopies of their passport pages showing the passport number, the dates of issue and expiry, name and date of birth, and the stamp made by Canadian authorities on their most recent entry into Canada. This directive is in accordance with the funding regulations of the Québec Ministry of Education which requires that all International students registered at a university in Québec have in their International Student file a copy of their Québec Certificate of Acceptance and their Study Permit, and for persons studying six months or less, a photocopy of the appropriate passport pages. International students are required to provide the appropriate documentation to the International Students Office before the DNE deadline of their first semester at Concordia. Failure to comply to this regulation could result in the cancellation of future course registration beginning with the next academic term.

Working On-Campus

Immigration regulations allow full-time international students to accept employment on the campus of the educational institution where they are registered, as long as they hold a valid Study Permit. Students are not required to apply for a Work Permit as long as the employment is *on-campus*.

Spouses of international students are allowed to work on and off-campus and are required to apply for a *Work Permit*. However, spouses who are full-time students are restricted to on-campus employment only.

Post-Graduation Employment

After graduation, international students may work in Canada for one year provided the employment is related to their field of studies. In this case, students must apply for a *Work Permit* within ninety (90) days of the release of final marks. Further information may be obtained at the International Students Office, (514) 848-2424 ext. 3515, Email: iso@alcor.concordia.ca

Immigration regulations cited in this section are valid at the time of this writing. For further information we recommend that you contact the Canadian Consulate/Embassy in your country.

International Student Health and Accident Insurance

Québec Immigration Services and the Québec Ministry of Education require that all international students be covered by a health insurance plan while studying in Québec. To this end, Concordia University has implemented a compulsory health and accident insurance plan for all international students. *Health insurance fees are charged automatically every year when international students register for courses or for Continuing in Program Registrations.*

The single coverage for the 2006-2007 academic year is $480.00 (subject to change). Coverage is from August 15, 2006 until August 14, 2007. Students who register in January pay a pro-rated premium for the eight month period ending August 14, 2007.

Only certain categories of International Students will be permitted to opt-out of the Concordia Health Insurance Plan for International Students. These categories are listed below. Please note that Concordia University does not accept any other kind of health insurance plan.

Proof of insurance will be required in order to process an exemption; it must be presented in English or French indicating the period and amount of coverage available in Canada. This information is required by the Québec Ministry of Education and must be in the student's Concordia file for audits and reports.

1) Students who have a valid Québec Medicare Card/Carte d'Assurance-Maladie du Québec.
2) As a result of intergovernmental agreements, full-time students from Denmark, France, Finland, Luxembourg, Norway, Portugal and Sweden who were covered under the government's medical system before their arrival in Québec will be eligible for the Québec medical benefits (called Québec Medicare Card or Carte d'Assurance-Maladie du Québec) These students must apply for the Québec Medicare card. Further information is available at the International Students Office.
3) International students who receive a scholarship from a sponsoring organization (e.g. CIDA, ICCS, CBIE, WUSC, etc.). Students must ensure that their scholarship letter clearly mentions the health insurance coverage as well as the duration of the policy.
4) Refugee Claimants and Convention Refugees who can show proof of medical coverage by the Canadian or Québec Government.
5) International students who become permanent residents of Canada. An exemption/adjustment will be based on the date the International Students Office received the record of landing document.

Applications for exemptions are processed in person at the ISO (International Students Office), Hall Building, 6th floor, Room 653. Requests must be processed every year before the prescribed deadlines. Requests received after the deadlines and approved by the ISO will be charged an administration fee. Graduate students who are registered at Concordia but not residing in Canada can apply for an exemption of their health insurance fees by sending a request to 'opt-out' of the Concordia Health Insurance Plan, by fax to the International Students Office at (514) 848-3599 before the prescribed deadlines. Refunds will be considered only for students who have not filed any claim to the Insurance Company during the current insured period. Refunds are given in a form of a credit to the student's University Account.

Exemption deadlines for students beginning the 2006-2007 academic year in September 2006:

First deadline: October 31, 2006
Full refund

Second deadline: December 21, 2006
Refund of $380.00 (administration fee: $100)

Final deadline: May 1, 2007
Refund of $280.00 (administration fee: $200)

Exemption deadlines for students beginning the 2006-2007 academic year in January 2007:

First deadline: February 28, 2007
Full refund

Final deadline: May 1, 2007
Refund of $299.00 (administration fee: $100)

Exemption deadline for students beginning in the Summer 2007:

Final deadline: June 15, 2007
Full refund

No refunds will be approved after these final deadlines.

Tuition and Other Fees for International Students

The cost of tuition for an academic year (i.e., Fall, Winter, Summer) varies depending upon a student's status and level of study. Tuition fees for Graduate Diploma, Certificate, Independent and Visiting/Exchange Students are charged on the basis of the number of academic credits registered. Other

compulsory fees include an Administrative fee, Student Service fee, Graduate Student Association fee and International Student Health Insurance Fee. International Students should refer to the **Financial Regulations** section on page 760, for detailed information on tuition and other fees.

Exemptions from Differential Fees

Certain students may be eligible to pay the same fees as Québec residents. The following are among those exempted from paying differential fees:

- diplomats, consular personnel, accredited representatives or civil servants of a foreign country, the United Nations or one of its organizations, an intergovernmental organization to which Canada belongs, and any member of the staff of the above-listed persons who are working in Canada in an official capacity and who have obtained an attestation issued by "le Protocole" (Gouvernment du Québec), 525 Réné Lévesque East, Québec City, Telephone (418) 649-2346. This attestation is valid for one academic year and must be renewed each year the student is attending university;
- the spouse and unmarried children of the above-listed persons;
- an international student whose spouse or parents hold certain categories of Work Permits in Québec. For further details, contact the Office of Enrolment Services, Room LB - 700, telephone: 848-2424 ext. 2624;
- a student who is registered at a university and who has come to Québec as an exchange student, or as a student participating in a program of cooperation agreed to by the Government of Québec and which exempts the participants from paying differential fees;
- a student who is a French citizen (accord France-Québec);
- a student who is admitted to a Québec university and whose country has a fee remission agreement with the Québec Government. The government of Québec has agreements for granting a limited number of exemptions from differential fees for International students from the following countries:

  Algeria, Andorra, Belgium (Flemish community), Belgium (French community), Benin, Bolivia, Burkina Faso, Cameroon, China, Colombia (ICETEX), Congo (Brazzaville), Democratic Republic of the Congo, Ecuador, Egypt, Gabon, Germany (Bavaria, DAAD), Guinea, Haiti, Honduras, Israel, Italy, Ivory Coast, Korea, Lebanon, Luxembourg, Madagascar, Mali, Mauritania, Mauritius, Mexico (CONACYT, SEP, SRE), Morocco, Niger, Panama, Peru, Rwanda, Senegal, Spain (Catalonia), Togo, Tunisia, Uruguay, Vietnam.

  Taken from Gouvernement du Québec, Ministère de l'Éducation, Direction des affaires étudiantes et de la cooperation du Ministère de l'Éducation website at:
  http://www.mds.gouv.qc.ca/ens-sup/ens-univ/droits_scolarite-A.asp
  Note: Students who are granted a fee remission must maintain full-time status, each semester, in order to qualify for the fee remission.

Inquiries and applications for an exemption should be made directly to the student's own Ministry of Education prior to leaving their home country. In some cases, when the person is in Canada, it may be possible to apply for an exemption at their Embassy or Consulate in Canada or in the United States.

- a student who is registered at a university and whose status as a Permanent Resident has been officially recognized by Canada Immigration. Should a student receive permanent resident status during the academic year, he or she should immediately present the official document to the Office of Enrolment Services, Room LB-700, and to the International Students Office, Room H-653, to have his or her status changed and to inquire about a possible refund. For more information on refund policies and deadlines for submission of documents, please contact the Office of Enrolment Services.
- under certain conditions, students who have obtained Convention Refugee status may be eligible for an exemption from the differential fees for international students. Depending on the documentation submitted, they may be eligible to pay either the Québec tuition rate or the Canadian non-Québec rate. For information on deadlines for submission of documentation and on the specific documents required, please contact the Office of Enrolment Services.
- a student who is registered at a university in a program of studies which is specifically exempted by the Ministry of Education.
- a master's or doctoral student who has been granted a fee remission from Concordia University. Application forms are available at the Graduate Awards Office, telephone: 848-2424 ext. 3801. The deadline for applications is December 15 of each year for the next academic year.
  Note: The Fellowship deadline for graduate programs in Psychology is January 3; the fellowship deadline for the MFA is February 1.

Tuition Payment Arrangements

Students may be eligible to make payment arrangements through *Payroll Deductions* (Teaching and Research Assistants, certain Concordia employees). Payment arrangements ***do not supersede*** Concordia University's tuition and other fees payment policies with regard to the release of transcripts, student records, degrees, diplomas or other official records, or permission to register in future sessions. Interest charges are assessed on all outstanding balances not paid in accordance to the University's tuition and other fees payment policies regardless of whether or not a payment arrangement has been made with the Student Accounts Office.

Fee Remission Awards for International Students

The Government of Québec allows universities to exempt a certain number of full-time international students who have been admitted to graduate programs from paying academic tuition fees at the international rate. Detailed information can be found in **Graduate Awards**, page 30.

Student Services

Graduate Students' Association

The Graduate Students' Association has its own building (the Grad House) and is located at 2030 Mackay Street (Telephone: 848-2424 ext. 7900). All students registered for a program of graduate study at the University are GSA members. The GSA is run by graduate students who have volunteered their time to make life more interesting and enjoyable for graduate students at the University. The meetings and activities of the GSA are intended to provide opportunities for students to meet and to communicate about matters of common concern. Special events and parties are held throughout the year. The GSA provides advocacy services, lounge and study space, computers and a photocopier. The GSA is a democratic membership-based organization that advances the interests of graduate students. GSA representatives sit on the decision-making bodies of the University, such as the Board of Governors, the Senate, the Faculty Councils and the Council of the School of Graduate Studies. Included on the GSA Council are representatives from each Faculty and the John Molson School of Business. Elections are held annually. The Association welcomes the interest and participation of all graduate students.

Ombuds Office

The Ombuds Office offers information, advice and assistance in dealing with university related problems and handles complaints not settled through normal channels. The staff of the Ombuds Office are available to any member of the university community and are independent of the usual administrative structures. Requests are dealt with on a confidential basis. Sir George Williams Campus – 1550 de Maisonneuve West, GM 1120, (telephone: 848-2424 ext. 4964; e-mail: ombuds@vax2.concordia.ca). The office is open from 9:00 a.m. to 5:00 p.m. Evening appointments as well as appointments on the Loyola campus can be made on request. Please see the section Terms of Reference of the Ombuds Office for detailed information.

Code of Rights and Responsibilities

If you are being subjected to behaviour that is discriminatory, harassing, threatening or violent, consult the Advisor on Rights and Responsibilities without delay. The service is confidential, and you do NOT have to file a complaint in order to get advice and help. The advisor will help you evaluate your options for resolving the matter: you make the choice that is best for you.
1550 de Maisonneuve, Room 1120;
Tel.: 848-2424 ext. 4857; advisor@alcor.concordia.ca;
http://www.concordia.ca/rights

Housing Service

Off-campus housing information may be obtained from: Concordia University Students' Association, H-260, Sir George Williams Campus (Tel. 848-2424 ext. 7476).

The Applied Psychology Centre

The Department of Psychology offers psychological therapy and assessment for individual adults, children, and families. Services are provided by advanced graduate students in clinical psychology under the supervision of licensed psychologists. There is a fee for this service. The clinic operates from August 15 to April 30 only. (Telephone: (514) 848-2424 ext. 7550). The hours are Monday to Friday, 9 a.m.- 5 p.m., and one evening until 7 p.m. Service may also be available throughout the year by licensed psychologists who are recent graduates of our program. Inquire about their fee structure.

International Student Exchange Programs (ISEP)

Concordia University's Centre for International Academic Cooperation (CIAC), in collaboration with the Faculties of Arts & Science, Engineering & Computer Science, Fine Arts, the John Molson School of Business and the School of Graduate Studies, coordinates exchange programs for all full-time Concordia students.

All full-time students wishing to participate in an exchange must meet the following criteria:

- be in good academic standing and have a good to excellent academic record;
- have completed at least one year of full-time study in the program in which they are registered;
- have the written permission of the Graduate Program Director.

In most cases, students should be fluent in the language of the host country and institution. An important aspect for students considering participating in the I/SEP is that tuition and related fees are generally payable to Concordia University. All incidental fees such as health insurance, living expenses, transportation cost are the responsibility of the student.

The CIAC also administers a "Study Away Program" which permits students to undertake research at universities or institutions in other Canadian provinces. For more information about the I/SEP or the Study Away Program, graduate students are encouraged to contact:

Centre for International Academic Cooperation
7141 Sherbrooke Street W.
Suite: AD-207 Loyola Campus

Tel.: 848-2424 ext. 4987; fax: 848-2888
Email: ciac@vax2.concordia.ca

Programme de Bourses de MEQ pour de court séjours d'études à l'éxterieure du Québec

The *Programme de Bourses de MEQ pour de Courts Séjours d'études à l'exterieure du Québec* is a provincially funded program for Quebec resident students who are registered full-time in a Quebec university. For more information about this program, students should contact:

Centre for International Academic Cooperation
7141 Sherbrooke Street W.
Suite: AD-207 Loyola Campus,
Tel.: 848-2424 ext. 4987; fax: 848-2424 ext. 2888
Email: ciac@vax2.concordia.ca

Dean of Students

The Dean of Students Office is the principle resource at the University for the interpretation and regulation of policies and procedures as these apply to the non-academic aspects of student life as well as being the principle liaison between the University and its student associations. Student associations and groups, of whatever nature, are one of the primary means by which students can relate meaningfully to the institution. By providing liaison with and support to student groups and their governing bodies, the Dean of Students encourages students in the conduct of their own collective affairs, and facilitates the growth of student associations and the active involvement in them by students.

Student Services' Mission

The mission of Concordia University's Student Services is to provide a network of expertise, resources and programs to facilitate and enhance students' academic success in their personal development. We advocate for students, support diversity and encourage a strong sense of community. We are committed to adapting our practices to meet current and evolving needs of the University in partnership with students, faculty and staff.

Approved by Concordia Council on Student Life - November 2001

Website: http://deanofstudents.concordia.ca

SGW Campus	LOYOLA Campus
Hall Building, H-653	Administration Bldg., AD-121
(514) 848-2424 ext. 3517	(514) 848-2424 ext. 3535

The following principles are fundamental to the mission of Student Services at Concordia University:

A Student-Centred View. Concordia provides the ideal environment and opportunity for an appreciation of diversity. Programs and services should focus on honouring this diversity. Each individual is unique. As a reflection of the wider society, the University can help students learn to value the worth and dignity of persons, regardless of their race, religion, nationality, sexual preference, age, gender, cultural background, ability or lifestyle. The acquisition of knowledge goes hand-in-hand with personal development. Student Services aims at an individual's total growth. Student Services must also act as an advocate for the needs and worth of students as full members of the University community.

Health Services

Health Services is an on-campus clinic and health promotion centre. The staff, which includes nurses, general practitioners, consulting psychiatrists, psychotherapists, support staff, and health educators, work collaboratively to provide students with high-quality personalized health care and health education.

All services are strictly confidential. Information can only be released with the student's written authorization. This policy applies regardless of whether the information is requested by family members, community physicians, therapists or University officials.

Services. Health Services offers a wide variety of services including:

Clinical Services
- Medical evaluation, treatment and consultation
- Asthma teaching clinic
- General medical care for injuries and illnesses
- Gynecology, birth control, emergency contraceptive pill, pregnancy tests, and pregnancy continuation or abortion referrals
- Sexually Transmitted Illness assessments, cultures and treatment
- HIV non-nominal testing which includes pre-and-post test counselling
- Consultation and referrals for substance abuse

Health promotion and wellness
- Preventive medical care, including immunizations and annual physicals
- Nutrition and body image counselling and education
- Drug and alcohol education
- Stress management
- Wellness education
- Safer sex education
- Smoking cessation

Mental Health
- Psychiatry, on consultation
- Short term psychotherapy

For those that are not offered, such as dental care and eye care, Health Services can provide names of resources that are located in the vicinity.

How to use Health Services. Using Health Services is easy. Students may call ahead to make an appointment for predictable issues or concerns such as a physical examination, prescription renewal or health education. For more urgent health-care needs, students may come into one of the walk-in clinics where patients are seen on a first come, first served basis.

Health Insurance. Most of the services offered at Health Services are free of charge, provided that students are currently registered and have valid health insurance. For visits with a nurse or health educators, students will be asked to show their Concordia ID card. For physician visits, proof of Quebec Health Insurance plan coverage, coverage from another province, or International Student Insurance is required. If a client of Health Services does not have valid health insurance, he or she will be required to pay for a physician visit. Both locations of Health Services can provide students with information pamphlets on how to obtain a valid health card or how to maintain coverage while studying outside their province of origin.

Out of Province Students. To retain health coverage while studying at Concordia, out of province students must notify their provincial health authority of their status as a student in Quebec. This must be done at the beginning of each academic year. Information on how to accomplish this can be obtained through Health Services or on the Health Services website. Unlike clinics in the community, foreign and out-of-province students are not charged additional fees for their medical care. Students are therefore encouraged to use Health Services for comprehensive care.

Health Promotion. Health Services offers programs and activities in health education, health promotion and informed health care consumerism. Health Services maintains a lending library which is stocked with hundreds of books, relaxation tapes and videos and DVDs. The Health Educators at Health Services, along with other Health Services staff, bring health promotion information to students through the monthly newsletter Health Notes, regular health information kiosks on both campuses and special health events such as the Health Fair. Check our website for a calendar of events. Discount prices are offered on a wide variety of items: condoms, dental dams, Latex gloves, finger splints, first aid kits, band-aids, ace bandages slings and oral thermometers.

Loyola Health Services. The Loyola Health Services ensures access to health care and health information on the Loyola campus. The centre is staffed by a nurse who can provide many of the services offered at the SGW Health

Services. Appointments to visit a physician are available at the Loyola campus. Appointments can be made for a physical examination and prescription renewal.

Medical condition and Academic Responsibilities. If medical problems or concerns are interfering with a student's ability to attend class, complete assignments or write exams, Health Services staff can work with the student to assess the problem and review ways in which Health Services can be of assistance.

Health Services Locations and Hours of Operations

Sir George Williams Campus ♿
2155 Guy Street (Annex ER), Room 407
Tel.: (514) 848-2424 ext. 3565
Fax: (514) 848-2834
Monday through Friday 9 am-5 pm*

Loyola Campus ♿
Administration Bldg.
Room AD 103
Tel.: (514) 848-2424 ext. 3575
Fax: (514) 848-4533

*Closed for lunch between 11:30 am and 1:00 pm Monday to Friday 9 am-4:30 pm

Health Services Website: http://health.concordia.ca
E-mail: healthy@alcor.concordia.ca

Financial Aid and Awards

The Financial Aid and Awards Office assists students and perspective students in seeking and securing financial assistance to enable them to pursue their scholastic objectives. Student financial assistance is available in various forms, such as Government Financial Aid, usually as student loans and bursary programs, on-campus work opportunities through the University Work Study Program. The staff in the Financial Aid and Awards Office is available to explain eligibility requirements and application procedures. Students are encouraged to plan their personal budgets well in advance as the processing of government student financial aid applications requires two to three months. Students should understand that government financial aid or University Award Programs are not intended as full support programs, where the assistance granted will meet all of the applicants needs, but rather as a complement to resources the student and his or her family, where applicable, may already have. Financial assistance is a necessity for some 50% of full time students at Concordia. If you need assistance or want more information, visit the Financial Aid Office located in Room LB 085 of the J.W. McConnell Library Building on the Sir George Williams Campus.

Government Loans and Bursaries. Government loans and bursaries are available to full-time students registered at Concordia University. The Financial Aid officers are available to assist students in completing their applications.

Application forms are available from the Financial Aid and Awards Office; please consult the Office for regulations and deadlines.

Short-Term Advances. Limited funds are available at the Financial Aid and Awards Office for students experiencing financial difficulties. Such advances are issued to undergraduate and graduate, full time and part time students at Concordia University. Students must see a Financial Aid Officer for further information on eligibility requirements and conditions. The Financial Aid and Awards Office wishes to acknowledge the generous contributions of the Concordia University Alumni Association Inc. to the University.

Tuition Deferrals. Students who have received a confirmation of financial assistance from a government funding source, and who are unable to pay their tuition fees by the required payment deadlines, may apply to defer payment until such time as they receive their funds.

Requests for tuition deferrals must be made through the Financial Aid and Awards Office. Tuition deferrals will not cover any outstanding tuition fees from previous years nor the interest on the outstanding balance. For further information, please contact the Financial Aid and Awards Office.

Work Study Program

Work Study is a financial aid program funded by:
- Concordia University,
- the Department of Aide financière aux études of the Québec Ministry of Education and
- La Direction des affaires étudiantes et de la coopération internationale du Ministère de l'Education

Work-Study is designed to assist full-time Concordia University students, with education and living costs, when their own resources are determined to be insufficient, by providing opportunities for part-time work at Concordia University during the academic year ***(Maximum 200 hours per calendar term)***. The intent of the program is to give students an opportunity for career or life related experience, while at the same time meeting a portion of their financial need.

Application is available on *My Portal*.

Foundations and Private Agencies. Hundreds of professional associations, foundations and companies offer financial support for graduate students. Publications are available in public libraries, university reference libraries, and consulate or embassy offices. At Concordia, see the Counselling and Development Centre, H-440, Sir George Williams Campus, or the Counselling and Development Centre, 2490 West Broadway, Loyola Campus.

Support Services

Advocacy and Support Services supports the self-development of students in exercising their own rights, works towards an environment which is open to constructive criticism, advocates against discrimination and encourages responsible change. The following units form the Advocacy Sector: Multi-Faith Chaplaincy, Centre for Native Education, International Students Office, Legal Information Services and Office for Students with Disabilities, Student Advocate Program and the Peer Support Program.

Loyola Campus Administration Building, Room AD-131
Telephone: (514) 848-2424 ext. 3509 (voice and TDD)
http://supportservices.concordia.ca/

Multi-Faith Chaplaincy

Multi-faith Chaplaincy at Concordia University exists within the academic community to nurture faith, spirituality and social responsibility, and to provide a pastoral presence, especially for students.

Workshops, discussion groups, personal & spiritual development: Insight meditation, Bible study, self-awareness, healing and spiritual training, book reading and discussions, inter-religious dialogue, pastoral counselling and more...

Religious Services: Daily & Sunday liturgies at the Loyola Chapel, an open innovative and welcoming Roman Catholic community, marriage and other sacramental preparation and community gathering space on the SGW campus, referrals to ministers, advisors and teachers of a variety of different traditions.

Social justice action and community involvement: Education on justice issues, prison visits, volunteer work placements, serving meals for the needy, collaboration with local groups on particular issues, public lectures and educational events.

Support for Students: Student Emergency Food Fund, Mother Hubbard's Thursday night meals for the students, counselling and referrals, social gatherings, collaboration with other student services.

Contact the Multi-faith Chaplaincy:

Loyola Address:
AD-130, 7141 Sherbrooke W.
Tel: 848-2424 ext. 3588
Fax: 848-3592

SGW Address :
Annex Z, Rooms 02-106, 2090 Mackay
Tel: 848-2424 ext. 3593
Fax: 848-4587
e-mail: Multi-faith@concordia.ca
Web site: http://deanofstudents.concordia.ca/chaplaincy/

Centre for Native Education

The Centre for Native Education offers support services and resources to Native students at Concordia. The Centre is a welcoming space where students can meet to plan social activities or just relax between classes. Staff are available to address individual needs and provide support and encouragement for all Native students to continue with their program and achieve their highest potential at Concordia University. Native students may access the Centre's academic programs and services, including study rooms and computers, tutoring and photocopy services.

S.G.W. Campus, Annex V, Room 310, telephone: (514) 848-2424 ext. 7327
http://supportservices.concordia.ca/nativecentre/

International Students Office

The International Students Office is responsible for providing programs to promote the growth and development of international students. Services include orientation sessions, coordination of campus and community services for international students, assistance with academic and para-academic problems and emergencies, assistance with immigration matters, administration of emergency loans, liaison with sponsoring agencies and governmental sponsors, and letters for military deferment, transfer of funds, and visitation requests.

All new international students are encouraged to visit the International Students Office as soon as they arrive on campus to receive an information package and for assistance in meeting their special needs. All international students are required to provide a copy of their CAQ (Quebec Certificate of Acceptance) and their Student Authorization to the International Students Office. International students are obliged to have health insurance coverage. For detailed information, please see the section on International Students.

S.G.W. Campus, Hall Building, Room H-653, tel.: (514) 848-2424 ext. 3515
http://supportservices.concordia.ca/iso/

Legal Information Services

Legal information is available to students requiring assistance on matters relating to their legal rights. Appointments are free and confidential. Commissioners of Oaths are also available.

Loyola Campus, Administration Building, Room AD 131, Telephone: (514) 848-2424 ext. 4960 (Voice & TDD);
http://supportservices.concordia.ca/legalinformationservices/

Services for Students with Disabilities

Policy on Accessibility for Students with Disabilities

The University is committed to providing equal education opportunities to all students which includes students with disabilities. To demonstrate full respect for the academic capacities and potential of students with disabilities, the University seeks to remove attitudinal and physical barriers that may hinder or prevent qualified students with disabilities from participating fully in university life. For further information on this policy, see
http://supportservices.concordia.ca/pdf/VRS-14.pdf

Students with visual or hearing impairments, mobility limitations or learning disabilities may require special services while studying at Concordia. Services include orientation, tutors, note takers, classroom relocation. Tape recorders, FM personal systems, and personal computers with voice and Braille output are available for on campus use. All students with disabilities are advised to contact the coordinator as early as possible for assistance in meeting their special needs. Students using interpreter services, attendant care, or requiring identification to their professors must contact the Office for Students with Disabilities prior to the beginning of classes. As well, those students taking on-line courses are encouraged to contact the Office for Students with Disabilities for more information on adaptive hardware and software solutions before registering.

Students requiring special accommodation for examinations must contact Office for Students with Disabilities at the beginning of each semester. All arrangements are contingent upon submission of appropriate documentation. It is the responsibility of the student to submit recent documentation, request exam accommodations and verify specific exam arrangements with Office for Students with Disabilities. All accommodations must be exam specific as well as disability specific.

Students with disabilities who do not expect to graduate within the normal time period as set out under the flat rate tuition system are invited to discuss their particular situation with the Associate Dean, Graduate Studies and/or the Coordinator of Office for Students with Disabilities. Students are also reminded to apply for all applicable government bursaries/subsidies available under the Special Needs Programs designated for disabled students.

Learning Disability: Students who have documents attesting to a learning disability or who believe they may have a learning disability are advised to

contact the Office for Students with Disabilities immediately upon admission to the university. While not every learning disability can be effectively accommodated within a university setting, learning strategies and, where appropriate, special assistance to support students in their academic program, will be offered. Individualized examination arrangements can be provided to students with relevant assessments. These arrangements must be made with the Office for Students with Disabilities well in advance of the scheduled examination.

S.G.W. Campus, Hall Building, Room H 580
Telephone: (514) 848-2424 ext. 3525 (Voice & TDD).
Loyola Campus, Administration Building, Room AD 131
Telephone: (514) 848-2424 ext. 3536 (Voice & TDD);
http://supportservices.concordia.ca/disabilities/

Student Advocate Program

Students advocates are currently registered graduate and undergraduate Concordia students trained in University rules and regulations. They are students from various disciplines and backgrounds, dedicated to helping their peers. Student Advocates can represent students in both academic and non-academic cases. They can accompany students to interviews, hearings and appearances before committees. Student Advocates can assist with Student Requests, Grade Re-evaluation applications and appeals, as well as provide information and referral to university resources.

Loyola Campus
Administration Building, Room AD-131
(514) 848-2424 ext. 3509
http://supportservices.concordia.ca/studentadvocateprogram/

Peer Support Program

The Peer Support Program is a student-staffed listening and referral centre for Concordia students. The service is free and confidential. Peers receive intensive and ongoing training so they can help students clarify problems and can make appropriate referrals. Peers also facilitate a number of outreach programs and discussion groups.

Sir George William Campus
Annex Z, room 03
(514) 848-2424 ext. 3859
http://deanofstudents.concordia.ca/peersupport/

Child Care

Child care services are offered for children of students, faculty and staff. On the Sir George Williams Campus, parents may enroll children 18 months to 4 year 11 months of age in the Centre de la Petite Enfance Concordia. Centre de la Petite Enfance les P'tits Profs is located on the Loyola Campus. Parents may enroll children three months to five years. For more information about this child care service please contact the centres directly.

Financial assistance for Child Care expenses is available for eligible students through the Quebec Financial Aid - Loans and Bursaries program and through the Ministère de l'Emploi, de la Solidarité Social et de la Famille (MESSF).

Centre de Petite Enfance Concordia, S.G.W. Campus, DC 1st, 2305 St. Marc, telephone: (514) 848-8789
C.P.E. Les P'tits Profs, Loyola Campus, BB 101, 3500 Belmore, telephone: (514) 848-7788
http://deanofstudents.concordia.ca/childcare/index.shtml

Dragonroot Centre for Gender Advocacy

Formerly the Women's Centre, The Dragonroot Centre is a women and trans inclusive space for students and the Montreal community. The Centre operates from an anti-oppression analysis, where we try to work against barriers faced by, but not limited to, First Nations and indigenous people, people of colour, people with disabilities, poor people, deaf people, transsexual (male and female) and transgendered people, and gender benders. We offer free and confidential Peer Counselling, and provide information, referrals, and support for women and trans people. We are wheelchair accessible and have a drop-in space, support groups, workshops, various classes, and a small library.

S.G.W. Campus, Annex V-01
2110 Mackay
Telephone: 848-2424 ext. 7431
Counselling: 848-2424 ext. 7880

Counselling and Development

Sir George Williams Campus
Hall Building
H-440
Tel.: (514) 848-2424 ext. 3545

Loyola Campus,
Administration Building,
AD-103
Tel.: (514) 848-2424 ext. 3555

Career and Placement Services (CAPS)
2070 Mackay, Room EM-109
Tel.: (514) 848-2424 ext. 7345

Student Services

Open Monday to Friday, 9 a.m. to 5 p.m.*
*Summer hours vary
website: http://cdev.concordia.ca

The mission of Counselling and Development is to empower students to maximize their personal, academic, and career potential by providing diverse programs, resources and expertise in a supportive student-centred environment in order to facilitate student success. Our professional staff is composed of psychologists, personal and career counsellors, learning and study skills specialists, career librarians, and career advisors.

Student Success Centre
The Student Success Centre (H-481 and AD-103) provides information about university resources and access to a wide range of programs designed to ensure success at Concordia. The Student Success Centre is staffed by the Student Success Mentors, experienced Concordia students, including Mentors studying at the graduate level.

The Student Success Resource Centre on the Loyola Campus (AD-103) provides a relaxed and comfortable setting where students can access both online and print resources that support all the services available at Counselling and Development, including materials and information related to learning and study skills, life management skills, and career planning and job search. Also available are Graduate School guides and practice guides for tests such as the GRE, GMAT, LMAT and MCAT.

Career Services
It's never too early to start thinking about how you can put your degree to work.

- Not sure what you want to do with your degree?
- Need help in clarifying your career and educational goals?
- Are you thinking about studying abroad?
- Looking for funding sources?
- Want to connect with employers?
- Thinking about a dream job and want to know more about market trends?
- Looking for personalized career planning with career professionals?
- Need help in developing your internet job-hunting skills?
- Do you want a professional opinion about your résumé and cover letter?
- Want help with job interview techniques?

We organize campus recruiting, career fairs, career panel discussions and workshops.

At Career Services we have answers to your questions. We can help you plan your future. Visit us in person or on our website.

Counselling and Psychological Services
Focus on your personal goals
- Work with a counsellor
    - Deal with personal concerns (e.g. family, relationships, loss, sexuality, body-image, substance use, depression, anxiety, etc.)
    - Increase self-esteem and self-awareness
- Develop necessary life skills through individual counselling appointments and group workshops
    - Building Your Self-Confidence
    - Strategies for Overcoming Perfectionism
    - Assertiveness Training
    - Developing Positive Attitudes
    - Understanding Panic and Anxiety
- Take advantage of other counselling services
    - Immediate response to students who are in crisis
    - Information fairs and outreach activities on mental health and student success
    - Psychological and Career Testing services

Confidentiality assured

Student Learning Services
Develop your learning potential
- Enhance your study skills and learning strategies to meet graduate school demands
    - Strategies for thesis-writing, including overcoming writer's block
    - Strategies for managing research reading
    - Oral presentation skills
    - Problem-solving skills in math and science
    - Time management strategies for independent studies
- Take advantage of a wide variety of learning services
    - Meet with a Learning Specialist for individualized help
    - Sign up for one or more workshops
    - Attend math tutoring groups (for basic math courses)
    - Practice speaking English in *Conversation Groups* or *Talk Times*

Services for New Students
Ease your transition to graduate studies
- Prepare for your graduate studies; learn about university resources
    - Attend orientation programs such as *Discover Concordia*, *Start Right* and *Getting to Know U*
    - Take the *Student Success Check-up (CSI)*
    - Read *The Bridge*, the New Student Program magazine
- Establish a support network on campus
    - Visit the Student Success Centre H-481 or AD-103
    - Connect with a Graduate Student Success Mentor

- Learn about clubs, associations, and volunteer opportunities
- Develop leadership skills
  - Attend the *PLUS Leadership Workshop Series*

Recreation and Athletics

Physical activity is an important component of student life and it provides many opportunities for individual growth and development. Recreation and Athletics offers a complete and diversified program in order to provide an opportunity for all students to participate in a physical activity of their choice. The principles of fair play and equality of opportunity guide all program activities.

Fitness, recreational and skill development programs for men and women operate on both campuses under the supervision of professionally trained instructors. These activities provide a forum for physical fitness, structured participation and low intensity competition. The interuniversity sport program is primarily for students with playing experience and those who wish to pursue a high level of competition. Graduate as well as undergraduate students pursuing studies on a full-time basis and meeting the requirements of the Canadian Interuniversity Sport (CIS) are eligible to represent Concordia in interuniversity competition. Concordia University holds memberships in the CIS, QSSF and the OUA. Although Concordia has fielded national championship teams, the focus of the interuniversity program continues to be the development of academic and athletic excellence. Toward this end, Recreation and Athletics offers an academic support program (SAASP) to all student-athletes involved in interuniversity teams.

The Loyola campus is the focal point of most fitness, recreation and inter-university sport activities. This facility includes two full-length AstroPlay fields with lighting and a fitness and recreation centre complete with an arena, gymnasium and weight room. Intra mural and instructional programs are the focus at the Victoria gym on the Sir George Williams Campus. New recreational and athletic facilities and programming are currently in the development stage for both campuses.

Loyola Campus
Athletics Complex, Room PA-104
(514) 848-2424 ext. 3857
http://www.concordia.ca/stingers

Sir George Williams Campus
Victoria School, Room GY-060
(514) 848-2424 ext. 3860

Administrative Officers

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Cameron Tilson	Interim Director, Institutional Research
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Elizabeth Saccà	Dean, Graduate Studies

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Virginia Bruce	Director, Graduate Admissions & Student Administrative Affairs
Debbie MacFadden	Manager, Thesis & Publications
Patricia Verret	Manager, Graduate Awards

Past Deans of Graduate Studies

Stanley G. French	(1971-1986)
Manfred E. Szabo	(1986-1991)
Martin Kusy	(1991-1997)
Claude Bédard	(1997-2002)

Council of the School of Graduate Studies

The Council of the School of Graduate Studies is the governing body for all graduate programs at the University. The Council is composed of:

The Dean of the School of Graduate Studies, Chair, ex-officio;

The President - Honorary Chair;

The Provost and Vice-President;

The Associate Deans of Graduate Studies;

The Director of Research Services;

The Assistant Registrar;

A member of the decanal team involved in graduate studies from each Faculty appointed by the Dean of the Faculty;

Five faculty members involved in graduate studies from the Faculty of Arts and Science, with at least one from each of the sciences, the humanities, and the social sciences, each appointed for a three-year term by Faculty Council;

Five faculty members involved in graduate studies from the John Molson School of Business, each appointed for a three-year term by Faculty Council;

Five faculty members involved in graduate studies from the Faculty of Engineering and Computer Science, each appointed for a three year term by Faculty Council;

Five faculty members involved in graduate studies from the Faculty of Fine Arts, each appointed for a three year term by Faculty Council;

Five graduate students, each appointed for a one year term by the Graduate Students' Association, with at least one from each Faculty;

Five Graduate Program Directors, each elected for a one or two year term by the Graduate Program Directors, with at least one from each Faculty.

Members of the Council of the School of Graduate Studies

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Marie-France Wagner	Associate Professor, Études françaises
Engineering and Computer Science	
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Sabine Bergler	Associate Professor, Computer Science & Software Engineering
Bipin Desai	Professor, Computer Science & Software Engineering
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Marielle Nitoslawska	Professor/Program Head, MFA
Thomas Waugh	Professor/Program Head, Film Studies
Vacant	
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Rick Molz	Professor, Management
Sameer Mustafa	Assistant Professor, Accountancy
Fassil Nebebe	Professor, Decision Sciences/MIS
Gad Saad	Associate Professor, Marketing
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Vacant	
Vacant	
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A. Chapman, Ph.D. (McMaster)
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Y. Chaubey, Ph.D. (Rochester)
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Z. Chen, Ph.D. (Victoria)
Assistant Professor of Mechanical Engineering

Z. Chen, Ph.D. (Regina)
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V. Chvatal, Ph.D. (Waterloo)
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