



**Faculty of Engineering, including the Schools of  
Architecture and Urban Planning (Graduate)  
Programs, Courses and University Regulations  
2012-2013**



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**Note: Throughout this publication, "you" refers to students newly admitted, readmitted or returning to McGill.**

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## 1 Dean's Welcome

To Graduate Students and Postdoctoral Fellows:

I am extremely pleased to welcome you to McGill University. Our world-class scholarly community includes over 250 doctoral and master's degree programs, and is recognized for excellence across the full range of academic disciplines and professions. Graduate and Postdoctoral Studies (GPS) collaborates with the Faculties and other administrative and academic units to provide strategic leadership and vision for graduate teaching and research across the University. GPS also oversees the admission and registration of graduate students, disbursing graduate fellowships, supporting postdoctoral fellows, and facilitating the graduation process, including the examination of theses. GPS has partnered with Enrolment Services to offer streamlined services in a one-stop location at [Service Point](#).

McGill is a student-centred research institution that places singular importance upon the quality of graduate education and postdoctoral training. As Associate Provost (Graduate Education), as well as Dean of Graduate and Postdoctoral Studies, I work closely with the faculties, central administration, graduate students, professors, researchers, and postdoctoral fellows to provide a supportive, stimulating, and enriching academic environment for all graduate students and postdoctoral fellows.

McGill is ranked as one of Canada's most intensive research universities and among the world's top 25. We recognize that these successes come not only from our outstanding faculty members, but also from the quality of our graduate students and postdoctoral fellows—a community into which we are very happy to welcome you.

I invite you to join us in advancing this heritage of excellence at McGill.

*Martin Kreiswirth, Ph.D.*

*Associate Provost (Graduate Education)*

*Dean, Graduate and Postdoctoral Studies*

## 2 Graduate and Postdoctoral Studies

### 2.1 Administrative Officers

#### Administrative Officers

Martin Kreiswirth; B.A.(Hamilton), M.A.(Chic.), Ph.D.(Tor.)

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**Note:** For inquiries regarding specific graduate programs, please contact the appropriate department.

### 2.3 General Statement Concerning Higher Degrees

Graduate and Postdoctoral Studies (GPS) oversees all programs leading to graduate diplomas, certificates, and higher degrees, with the exception of some programs in the School of Continuing Studies. It is responsible for admission policies, the supervision of graduate students' work, and for recommending to Senate those who may receive the degrees, diplomas, and certificates.

## 3 Important Dates 2012–2013

For all dates relating to the academic year, consult [www.mcgill.ca/importantdates](http://www.mcgill.ca/importantdates).

## 4 Graduate Studies at a Glance

### 4.1 Graduate and Postdoctoral Degrees Offered by Faculty

McGill University offers graduate and postdoctoral programs in the following units (organized by their administering home faculty):

| Faculty of Agricultural and Environmental Sciences            | Degrees Available                           |
|---|---|
| : <i>Agricultural Economics</i>                               | M.Sc.                                       |
| : <i>Animal Science</i>                                       | M.Sc., M.Sc.A., Ph.D.                       |
| : <i>Bioresource Engineering</i>                              | M.Sc., M.Sc.A., Ph.D., Graduate Certificate |
| : <i>Biotechnology</i>  | M.Sc.A., Graduate Certificate               |
| : <i>Dietetics and Human Nutrition</i>                        | M.Sc., M.Sc.A., Ph.D., Graduate Diploma     |
| : <i>Food Science and Agricultural Chemistry</i>              | M.Sc., Ph.D.                                |
| : <i>Natural Resource Sciences</i>                            | M.Sc., Ph.D.                                |
| : <i>Parasitology</i>   | M.Sc., Ph.D.                                |
| : <i>Plant Science</i>  | M.Sc., M.Sc.A., Ph.D., Graduate Certificate |
| Faculty of Arts   | Degrees Available                           |
| : <i>Anthropology</i>   | M.A., Ph.D.                                 |
| : <i>Art History</i>  | M.A., Ph.D.                                 |
| Classics – see : <i>History and Classical Studies</i>         | N/A   |
| : <i>Communication Studies</i>                                | M.A., Ph.D.                                 |
| : <i>East Asian Studies</i>                                   | M.A., Ph.D.                                 |
| : <i>Economics</i>  | M.A., Ph.D.                                 |
| : <i>English</i>  | M.A., Ph.D.                                 |
| : <i>French Language and Literature</i>                       | M.A., Ph.D.                                 |
| : <i>Geography</i>  | M.A., Ph.D.                                 |
| : <i>History and Classical Studies</i>                        | M.A., Ph.D.                                 |
| : <i>Institute for the Study of International Development</i> | N/A   |
| : <i>Islamic Studies</i>                                      | M.A., Ph.D.                                 |

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| <b>Faculty of Arts</b>                                       | <b>Degrees Available</b>   |
| : <i>Jewish Studies</i>                                      | M.A.   |
| : <i>Languages, Literatures, and Cultures</i>                | M.A., Ph.D.  |
| : <i>Linguistics</i>   | M.A., Ph.D.  |
| : <i>Mathematics and Statistics</i>                          | M.A., Ph.D.  |
| : <i>Philosophy</i>  | M.A., Ph.D.  |
| : <i>Political Science</i>                                   | M.A., Ph.D.  |
| : <i>Psychology</i>  | M.A., Ph.D.  |
| : <i>Quebec Studies / Études sur le Québec</i>               | N/A  |
| : <i>Social Studies of Medicine</i>                          | N/A  |
| : <i>Social Work</i>   | M.S.W., Ph.D.  |
| : <i>Sociology</i>   | M.A., Ph.D.  |
| <b>School of Dentistry</b>                                   | <b>Degrees Available</b>   |
| : <i>Dentistry</i>   | M.Sc.  |
| <b>Desautels Faculty of Management</b>                       | <b>Degrees Available</b>   |
| : <i>Desautels Faculty of Management</i>                     | M.B.A., M.B.A. with Integrated B.C.L./LL.B., M.D./M.B.A., M.B.A./Japan, E.M.B.A., M.M.M., M.M., Ph.D., Graduate Certificate, Diploma |
| <b>Faculty of Education</b>                                  | <b>Degrees Available</b>   |
| : <i>Educational and Counselling Psychology</i>              | M.A., M.Ed., Ph.D., Graduate Diploma   |
| : <i>Information Studies</i>                                 | M.L.I.S., Ph.D., Graduate Certificate, Graduate Diploma  |
| : <i>Integrated Studies in Education</i>                     | M.A., Ph.D., Graduate Certificate  |
| : <i>Kinesiology and Physical Education</i>                  | M.A., M.Sc.  |
| <b>Faculty of Engineering</b>                                | <b>Degrees Available</b>   |
| <i>section 11.1: Architecture</i>                            | M.Arch., Ph.D.   |
| <i>section 11.2: Chemical Engineering</i>                    | M.Eng., Ph.D.  |
| <i>section 11.3: Civil Engineering and Applied Mechanics</i> | M.Sc., M.Eng., Ph.D.   |
| <i>section 11.4: Electrical and Computer Engineering</i>     | M.Eng., Ph.D.  |
| <i>section 11.5: Mechanical Engineering</i>                  | M.Sc., M.Eng., Ph.D.   |
| <i>section 11.6: Mining and Materials Engineering</i>        | M.Sc., M.Eng., Ph.D., Graduate Diploma   |
| <i>section 11.7: Urban Planning</i>                          | M.U.P.   |
| <b>Faculty of Law</b>  | <b>Degrees Available</b>   |
| : <i>Law</i>   | LL.M., D.C.L., Graduate Certificate  |
| <b>McGill School of Environment</b>                          | <b>Degrees Available</b>   |
| : <i>Environment</i>   | N/A  |
| <b>Faculty of Medicine</b>                                   | <b>Degrees Available</b>   |
| : <i>Anatomy and Cell Biology</i>                            | M.Sc., Ph.D.   |
| : <i>Biochemistry</i>  | M.Sc., Ph.D.   |
| : <i>Bioethics</i>   | N/A  |
| : <i>Biomedical Engineering</i>                              | M.Eng., Ph.D.  |
| : <i>Communication Sciences and Disorders</i>                | M.Sc., M.Sc.A., Ph.D.  |
| : <i>Epidemiology and Biostatistics</i>                      | M.Sc., Ph.D., Graduate Diploma   |

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| <b>Faculty of Medicine</b>                                     | <b>Degrees Available</b>                               |
| : <i>Human Genetics</i>  | M.Sc., Ph.D.   |
| : <i>Medical Physics</i>                                       | M.Sc.  |
| : <i>Medicine, Experimental</i>                                | M.Sc., Ph.D., Graduate Diploma                         |
| : <i>Medicine, Family (Option)</i>                             | N/A  |
| : <i>Microbiology and Immunology</i>                           | M.Sc., Ph.D.   |
| : <i>Neuroscience (Integrated Program in)</i>                  | M.Sc., Ph.D.   |
| : <i>Occupational Health</i>                                   | M.Sc.A., Ph.D.   |
| : <i>Otolaryngology – Head and Neck Surgery</i>                | M.Sc.  |
| : <i>Pathology</i>   | M.Sc., Ph.D.   |
| : <i>Pharmacology and Therapeutics</i>                         | M.Sc., Ph.D.   |
| : <i>Physiology</i>  | M.Sc., Ph.D.   |
| : <i>Psychiatry</i>  | M.Sc.  |
| : <i>Surgery, Experimental (Division of Surgical Research)</i> | M.Sc., Ph.D., Graduate Diploma                         |
| <b>Ingram School of Nursing</b>                                | <b>Degrees Available</b>                               |
| : <i>Nursing</i>   | M.Sc.A., Ph.D., Graduate Certificate, Graduate Diploma |
| <b>School of Physical and Occupational Therapy</b>             | <b>Degrees Available</b>                               |
| : <i>Physical and Occupational Therapy</i>                     | M.Sc., M.Sc.A., Ph.D., Graduate Certificate            |
| <b>Faculty of Religious Studies</b>                            | <b>Degrees Available</b>                               |
| : <i>Religious Studies</i>                                     | M.A., S.T.M., Ph.D.                                    |
| <b>Schulich School of Music</b>                                | <b>Degrees Available</b>                               |
| : <i>Schulich School of Music</i>                              | M.A., M.Mus., D.Mus., Ph.D., Graduate Diploma          |
| <b>Faculty of Science</b>                                      | <b>Degrees Available</b>                               |
| : <i>Atmospheric and Oceanic Sciences</i>                      | M.Sc., Ph.D.   |
| : <i>Biology</i>   | M.Sc., Ph.D.   |
| : <i>Chemistry</i>   | M.Sc., M.Sc.A., Ph.D.                                  |
| : <i>Computer Science</i>                                      | M.Sc., Ph.D.   |
| : <i>Earth and Planetary Sciences</i>                          | M.Sc., Ph.D.   |
| : <i>Geography</i>   | M.Sc., Ph.D.   |
| : <i>Mathematics and Statistics</i>                            | M.Sc., Ph.D.   |
| : <i>Physics</i>   | M.Sc., Ph.D.   |
| : <i>Psychology</i>  | M.Sc., Ph.D.   |

## 4.2 Master's Degrees and Prerequisites

The following list shows all of the master's degrees available at McGill, along with their prerequisites. See [section 4.3: Master's Degree Programs and Specializations](#) for more information on specific programs and options.

| Degree                            | Prerequisites   |
|-----------------------------------|---|
| Master of Arts<br>M.A.            | Bachelor of Arts in the subject selected for graduate work. See appropriate unit. |
| Master of Architecture<br>M.Arch. | Professional degree – McGill B.Sc.(Arch.) degree, or equivalent.                  |

| Degree   |                              | Prerequisites   |
|--|------------------------------|---|
|  |                              | Post-professional degree – an M.Arch. (professional degree) or equivalent professional degree.  |
| Master of Business Administration  | M.B.A.                       | An undergraduate degree from an approved university. See : <a href="#">M.B.A. Program</a> .   |
| Master of Business Administration with integrated Bachelor of Civil Law / Bachelor of Laws | M.B.A. with B.C.L./LL.B.     | See : <a href="#">M.B.A. Program</a> .  |
| Master of Business Administration with Doctor of Medicine / Master of Surgery              | M.B.A. with M.D.,C.M.        | See : <a href="#">M.B.A. Program</a> .  |
| Master of Education  | M.Ed.                        | Bachelor's degree with specialization related to the subject chosen for graduate work, plus a Permanent Quebec Teaching Diploma or its equivalent for some of the above degrees. See appropriate department.  |
| Master of Engineering  | M.Eng.                       | Bachelor of Engineering or equivalent, with specialization appropriate for the subject selected for graduate study. See appropriate department.   |
| Master of Laws   | LL.M.                        | An acceptable degree in Law or equivalent qualifications. See : <a href="#">Law Admission Requirements and Application Procedures</a> .   |
| Master of Library and Information Studies  | M.L.I.S.                     | At least a bachelor's degree from a recognized university. See : <a href="#">Information Studies Admission Requirements and Application Procedures</a> .  |
| Master of Management   | M.M.                         | See : <a href="#">Master of Management Programs Admission Requirements and Application Procedures</a> .   |
| Master of Manufacturing Management   | M.M.M.                       | See : <a href="#">Master of Management Programs Admission Requirements and Application Procedures</a> .   |
| Master of Music  | M.Mus.                       | Bachelor of Music or Bachelor of Arts with concentration in the area selected for graduate study.<br>Applicants to the Performance program are required to pass auditions in their speciality.<br>See : <a href="#">Schulich School of Music</a> .  |
| Master of Sacred Theology  | S.T.M.                       | B.A. with specialization in religious studies or theology. See : <a href="#">Religious Studies Admission Requirements and Application Procedures</a> .  |
| Master of Science  | M.Sc.                        | Bachelor of Science in the subject selected for graduate work. See appropriate unit.  |
| Master of Science, Applied   | M.Sc.A.                      | A bachelor's degree in the subject selected for graduate work. See appropriate unit.  |
| Master of Social Work  | M.S.W.                       | Bachelor's degree in Social Work including courses in statistics and social science research methods. See : <a href="#">Social Work Admission Requirements and Application Procedures</a> .   |
| Master of Social Work with Bachelor of Civil Law and Bachelor of Laws                      | M.S.W. with B.C.L. and LL.B. | See : <a href="#">Social Work Admission Requirements and Application Procedures</a> .   |
| Master of Urban Planning   | M.U.P.                       | Bachelor's degree in any one of the following: Anthropology, Architecture, Economics, Civil Engineering, Geography, Law, Management, Political Science, Social Work, Sociology, or Urban Planning, with adequate knowledge of quantitative techniques. See <a href="#">section 11.7.3: Urban Planning Admission Requirements and Application Procedures</a> . |

### 4.3 Master's Degree Programs and Specializations

The following list shows all of the programs and options available for each degree at McGill.

#### Master of Architecture (M.Arch.)

| Program      | Thesis/Non-Thesis | Options  |
|--------------|-------------------|--|
| Professional | Non-Thesis        | Design Studio, Design Studio – Directed Research |

| Program           | Thesis/Non-Thesis | Options  |
|-------------------|-------------------|--|
| Post-professional | Non-Thesis        | Architectural History and Theory, Cultural Mediations and Technology, Urban Design and Housing |

**Master of Arts (M.A.)**

Programs leading to the degree of Master of Arts are offered in the following areas:

| Program Areas                      | Thesis/Non-Thesis  | Options  |
|------------------------------------|--|--|
| Anthropology                       | Thesis, Non-Thesis   | Development Studies, Environment, Gender and Women's Studies (Thesis)  |
| Art History                        | Non-Thesis   | Gender and Women's Studies (Non-Thesis)  |
| Classics                           | Thesis, Non-Thesis   | N/A  |
| Communication Studies              | Thesis, Non-Thesis   | Gender and Women's Studies (Thesis)  |
| Counselling Psychology             | Non-Thesis (Professional Internship), Non-Thesis (Project) | N/A  |
| East Asian Studies                 | Thesis ( <i>Ad Hoc</i> )                                   | N/A  |
| Economics                          | Thesis, Non-Thesis   | Development Studies, Social Statistics (Non-Thesis)  |
| Educational Psychology             | Thesis   | N/A  |
| Education and Society              | Thesis, Non-Thesis   | Gender and Women's Studies (Thesis)<br>Gender and Women's Studies, Jewish Education (Non-Thesis)   |
| Educational Leadership             | Thesis, Non-Thesis (Coursework), Non-Thesis (Project)      | Gender and Women's Studies (Thesis)<br>Gender and Women's Studies (Non-Thesis (Project))   |
| English                            | Thesis, Non-Thesis   | N/A  |
| French                             | Thesis, Non-Thesis   | Gender and Women's Studies (Thesis)  |
| Geography                          | Thesis   | Development Studies, Environment, Gender and Women's Studies, Neotropical Environment, Social Statistics (Thesis)  |
| German                             | Thesis, Non-Thesis   | N/A  |
| Hispanic Studies                   | Thesis, Non-Thesis   | N/A  |
| History                            | Thesis, Non-Thesis   | Development Studies, European Studies, Gender and Women's Studies (Thesis)<br>Development Studies, European Studies, Gender and Women's Studies (Non-Thesis) |
| History of Medicine                | Non-Thesis   | N/A  |
| Islamic Studies                    | Thesis   | Gender and Women's Studies (Thesis)  |
| Italian                            | Thesis, Non-Thesis   | N/A  |
| Jewish Studies                     | Thesis, Non-Thesis   | N/A  |
| Kinesiology and Physical Education | Thesis, Non-Thesis   | N/A  |
| Linguistics                        | Non-Thesis   | N/A  |
| Mathematics and Statistics         | Thesis, Non-Thesis   | N/A  |
| Medical Anthropology               | Thesis   | N/A  |
| Music – Music Education            | Thesis, Non-Thesis   | N/A  |
| Music – Music Technology           | Thesis, Non-Thesis   | N/A  |
| Music – Musicology                 | Thesis, Non-Thesis   | Gender and Women's Studies (Thesis)  |
| Music – Theory                     | Thesis, Non-Thesis   | Gender and Women's Studies (Thesis)  |
| Philosophy                         | Thesis   | Bioethics  |

| Program Areas             | Thesis/Non-Thesis  | Options   |
|---------------------------|--------------------|---|
| Political Science         | Thesis, Non-Thesis | Development Studies, European Studies (Thesis)<br>Development Studies, European Studies, Gender and Women's Studies, Social Statistics (Non-Thesis)   |
| Psychology                | Thesis             | N/A   |
| Religious Studies         | Thesis, Non-Thesis | Bioethics, Gender and Women's Studies (Thesis)  |
| Russian                   | Thesis             | N/A   |
| Second Language Education | Thesis, Non-Thesis | Gender and Women's Studies (Thesis)   |
| Sociology                 | Thesis, Non-Thesis | Development Studies, Environment, Gender and Women's Studies, Medical Sociology, Neotropical Environment (Thesis)<br>Development Studies, Gender and Women's Studies, Medical Sociology, Social Statistics (Non-Thesis) |
| Teaching and Learning     | Non-Thesis         | English or French Second Language, English Language Arts, Mathematics, Science and Technology, Social Sciences  |

#### Master of Business Administration and Management Degrees (M.B.A., M.M., M.M.M.)

A program leading to the degree of Master of Business Administration (M.B.A.) is offered in the following concentrations:

| Program                      | Thesis/Non-Thesis | Options  |
|------------------------------|-------------------|--|
| M.B.A.                       | Non-Thesis        | Finance, General Management, Global Strategy and Leadership, Marketing, Technology and Innovation (Non-Thesis) |
| M.B.A. with B.C.L. and LL.B. | Non-Thesis        | Finance, General Management, Global Strategy and Leadership, Marketing, Technology and Innovation (Non-Thesis) |
| M.D./M.B.A.                  | Non-Thesis        | N/A  |
| M.B.A./Japan                 | Non-Thesis        | Finance, General Management, Global Strategy and Leadership, Marketing, Technology and Innovation (Non-Thesis) |
| E.M.B.A.                     | Non-Thesis        | N/A  |
| M.M.M.                       | Non-Thesis        | N/A  |
| M.M./IMPM                    | Non-Thesis        | N/A  |
| M.M./IMPMHL                  | Non-Thesis        | N/A  |

#### Master of Education (M.Ed.)

| Program                | Thesis/Non-Thesis | Options |
|------------------------|-------------------|---------|
| Educational Psychology | Non-Thesis        | N/A     |

#### Master of Engineering (M.Eng.)

| Program                          | Thesis/Non-Thesis  | Options  |
|----------------------------------|--------------------|--|
| Aerospace Engineering            | Non-Thesis         | N/A  |
| Biomedical Engineering           | Thesis, Non-Thesis | Bioinformatics (Thesis)                        |
| Chemical Engineering             | Non-Thesis         | Environmental Engineering (Non-Thesis)         |
| Civil Engineering                | Thesis, Non-Thesis | Environmental Engineering (Non-Thesis)         |
| Electrical Engineering           | Thesis, Non-Thesis | Computational Science and Engineering (Thesis) |
| Mechanical Engineering           | Thesis, Non-Thesis | Computational Science and Engineering (Thesis) |
| Mining and Materials Engineering | Thesis, Non-Thesis | Environmental Engineering (Non-Thesis)         |

#### Master of Laws (LL.M.)

| Program | Thesis/Non-Thesis  | Options   |
|---------|--------------------|---|
| Law     | Thesis, Non-Thesis | Bioethics, European Studies (Thesis)<br>Air and Space Law, Environment, Comparative Law (Thesis and Non-Thesis) |

**Master of Library and Information Studies (M.L.I.S.)**

The Graduate School of Library and Information Studies offers a postgraduate professional program in librarianship. Two years of full-time study or the equivalent are required.

| Program             | Thesis/Non-Thesis | Options |
|---------------------|-------------------|---------|
| Information Studies | Non-Thesis        | N/A     |

**Master of Music (M.Mus.)**

| Program             | Thesis/Non-Thesis | Options   |
|---------------------|-------------------|---|
| Music – Composition | Non-Thesis        | N/A   |
| Performance         | Thesis            | Vocal Pedagogy, Jazz Performance, Early Music, Orchestral Instruments and Guitar, Collaborative Piano, Piano, Opera and Voice, Organ and Church Music, Conducting |
| Sound Recording     | Non-Thesis        | N/A   |

**Master of Sacred Theology (S.T.M.)**

A program leading to the degree of Sanctae Theologiae Magister (S.T.M.) is given in the Faculty of Religious Studies. This degree is primarily for those who intend to enter the ministry of the Christian Church or another religious institution, or to proceed to teaching in schools. A Master of Arts program (thesis and non-thesis) is also available.

| Program           | Thesis/Non-Thesis | Options |
|-------------------|-------------------|---------|
| Religious Studies | Non-Thesis        | N/A     |

**Master of Science (M.Sc.)**

| Program Areas                        | Thesis/Non-Thesis  | Options  |
|--------------------------------------|--------------------|--|
| Agricultural Economics               | Thesis             | N/A  |
| Animal Science                       | Thesis             | N/A  |
| Atmospheric and Oceanic Science      | Thesis             | Environment (Thesis)   |
| Biochemistry                         | Thesis             | Bioinformatics, Chemical Biology (Thesis)  |
| Biology                              | Thesis             | Bioinformatics, Environment, Neotropical Environment   |
| Bioresource Engineering              | Thesis, Non-Thesis | Environment, Neotropical Environment (Thesis)<br>Integrated Water Resource Management (Non-Thesis) |
| Biostatistics                        | Thesis, Non-Thesis | N/A  |
| Cell Biology                         | Thesis             | N/A  |
| Chemistry                            | Thesis             | Chemical Biology   |
| Civil Engineering                    | Thesis             | N/A  |
| Communication Sciences and Disorders | Thesis             | N/A  |
| Computer Science                     | Thesis, Non-Thesis | Bioinformatics, Computational Science, Engineering (Thesis)  |
| Dental Science                       | Thesis, Non-Thesis | Oral and Maxillofacial Surgery (Thesis)  |
| Earth and Planetary Sciences         | Thesis             | Environment  |
| Entomology                           | Thesis             | Environment, Neotropical Environment   |
| Epidemiology                         | Thesis             | N/A  |
| Experimental Medicine                | Thesis             | Bioethics, Environment, Family Medicine  |
| Experimental Surgery                 | Thesis             | Surgical Research  |



| Program Areas                           | Thesis/Non-Thesis  | Options  |
|---|--------------------|--|
| Food Science and Agricultural Chemistry | Thesis, Non-Thesis | Food Safety (Non-Thesis)   |
| Genetic Counselling                     | Non-Thesis         | N/A  |
| Geography                               | Thesis             | Environment, Neotropical Environment   |
| Human Genetics                          | Thesis             | Bioethics, Bioinformatics  |
| Human Nutrition                         | Thesis             | N/A  |
| Kinesiology and Physical Education      | Thesis, Non-Thesis | N/A  |
| Mathematics and Statistics              | Thesis, Non-Thesis | Bioinformatics, Computational Science and Engineering                                  |
| Mechanical Engineering                  | Thesis             | N/A  |
| Medical Radiation Physics               | Thesis             | N/A  |
| Microbiology                            | Thesis             | Environment  |
| Microbiology and Immunology             | Thesis             | N/A  |
| Mining and Materials Engineering        | Thesis             | N/A  |
| Neuroscience                            | Thesis             | N/A  |
| Otolaryngology                          | Thesis             | N/A  |
| Parasitology                            | Thesis             | Bioinformatics, Environment  |
| Pathology                               | Thesis             | N/A  |
| Pharmacology                            | Thesis             | Chemical Biology   |
| Physics                                 | Thesis             | N/A  |
| Physiology                              | Thesis             | Bioinformatics   |
| Plant Science                           | Thesis             | Bioinformatics, Environment, Neotropical Environment                                   |
| Psychiatry                              | Thesis             | N/A  |
| Psychology                              | Thesis             | N/A  |
| Public Health                           | Non-Thesis         | Environment  |
| Rehabilitation Sciences                 | Thesis, Non-Thesis | N/A  |
| Renewable Resources                     | Thesis, Non-Thesis | Environment, Neotropical Environment (Thesis)<br>Environmental Assessment (Non-Thesis) |

### Master of Science, Applied (M.Sc.A.)

This degree was designed to provide postgraduate training of a professional and vocational character, with less emphasis on theoretical knowledge and research than in Master of Science programs, but with no lower standards either for admission or completion of requirements. Two years of full-time study or equivalent are normally required with an emphasis on coursework.

| Program                              | Thesis/Non-Thesis                            | Options   |
|--------------------------------------|--|---|
| Animal Science                       | Non-Thesis                                   | N/A   |
| Bioresource Engineering              | Non-Thesis                                   | Environment, Environmental Engineering, Neotropical Environment |
| Biotechnology                        | Non-Thesis                                   | N/A   |
| Chemistry                            | Non-Thesis                                   | N/A   |
| Communication Sciences and Disorders | Non-Thesis                                   | Speech-Language Pathology                                       |
| Human Nutrition                      | Non-Thesis (Project), Non-Thesis (Practicum) | N/A   |
| Nursing                              | Non-Thesis                                   | N/A   |
| Occupational Health                  | Non-Thesis (Resident), Non-Thesis (Distance) | N/A   |

| Program              | Thesis/Non-Thesis | Options |
|----------------------|-------------------|---------|
| Occupational Therapy | Non-Thesis        | N/A     |
| Physical Therapy     | Non-Thesis        | N/A     |
| Plant Science        | Non-Thesis        | N/A     |

**Master of Social Work (M.S.W.)**

The M.S.W. degree represents a second level of professional study in which students build competence in a chosen field of practice.

| Program   | Thesis/Non-Thesis  | Options |
|---|--------------------|---------|
| Social Work                                       | Thesis, Non-Thesis | N/A     |
| Joint Master of Social Work with B.C.L. and LL.B. | Non-Thesis         | N/A     |

**Master of Urban Planning**

The program requires a minimum of two years residence and a three-month internship with a member of a recognized planning association.

| Program        | Thesis/Non-Thesis  | Options  |
|----------------|--------------------|--|
| Urban Planning | Thesis, Non-Thesis | Transportation Planning, Urban Design (Non-Thesis) |

**4.4 Doctoral Degrees**

The following section lists the doctoral degrees available at McGill, along with their prerequisites. See [section 4.4.1: Doctoral Degree Programs and Specializations](#) for specific programs and options for doctoral degrees.

| Degree               |        | Prerequisites   |
|----------------------|--------|---|
| Doctor of Civil Law  | D.C.L. | B.C.L. or LL.B. and usually LL.M. See Law.  |
| Doctor of Music      | D.Mus. | M.A. in Composition (D.Mus. in Composition) or a master's degree in Performance, and professional and teaching experience (D.Mus. in Performance). See Music.   |
| Doctor of Philosophy | Ph.D.  | An undergraduate degree relevant to the subject chosen for graduate work. Some departments require all Ph.D. candidates to hold a master's degree in the same subject. Departments may recommend that candidates of undoubted promise should be allowed to proceed directly to the Ph.D. degree without being required to submit a master's thesis. |

**4.4.1 Doctoral Degree Programs and Specializations**

**Doctor of Civil Law (D.C.L.)**

Doctoral programs are offered in Air and Space Law and Law (Comparative Law). Both are predominantly research degrees awarded on the basis of a thesis that represents an original contribution to the development of legal science.

| Program | Options                            | Offered by Faculty/School |
|---------|------------------------------------|---------------------------|
| Law     | Air and Space Law, Comparative Law | Faculty of Law            |

**Doctor of Music (D.Mus.)**

The Doctor of Music degree is offered in Composition. The Doctoral thesis consists of a musical composition of major dimensions together with a written analysis of the work. The composition is presented by the candidate in concert. The regulations set forth for the Ph.D. generally apply also to the D.Mus.

The Doctor of Music degree is also offered in Performance. It is offered to professional musicians who wish to teach at the university level and to develop a specialization in a particular repertoire, approach, or discipline (musicology, music theory, music education and pedagogy, or music technology).

| Program | Options                          | Offered by Faculty/School |
|---------|----------------------------------|---------------------------|
| Music   | Composition, Performance Studies | Schulich School of Music  |

**Doctor of Philosophy Degrees**

Programs leading to the degree of Doctor of Philosophy are offered in the following areas:

| Program                                  | Options   | Offered by Faculty/School                          |
|--|---|--|
| Animal Science                           | Bioinformatics  | Faculty of Agricultural and Environmental Sciences |
| Anthropology                             | Neotropical Environment   | Faculty of Arts                                    |
| Architecture                             | N/A   | Faculty of Engineering                             |
| Art History                              | Gender and Women's Studies  | Faculty of Arts                                    |
| Atmospheric and Oceanic Sciences         | N/A   | Faculty of Science                                 |
| Biochemistry                             | Bioinformatics, Chemical Biology  | Faculty of Medicine                                |
| Biology                                  | Bioinformatics, Developmental Biology, Environment, Neotropical Environment | Faculty of Science                                 |
| Biomedical Engineering                   | Bioinformatics  | Faculty of Medicine                                |
| Bioresource Engineering                  | Environment, Neotropical Environment  | Faculty of Agricultural and Environmental Sciences |
| Biostatistics                            | N/A   | Faculty of Medicine                                |
| Cell Biology                             | N/A   | Faculty of Medicine                                |
| Chemical Engineering                     | N/A   | Faculty of Engineering                             |
| Chemistry                                | Chemical Biology  | Faculty of Science                                 |
| Civil Engineering                        | N/A   | Faculty of Engineering                             |
| Classics                                 | N/A   | Faculty of Arts                                    |
| Communication Sciences and Disorders     | Language Acquisition  | Faculty of Medicine                                |
| Communication Studies                    | Gender and Women's Studies  | Faculty of Arts                                    |
| Computer Science                         | Bioinformatics  | Faculty of Science                                 |
| Counselling Psychology                   | N/A   | Faculty of Education                               |
| Earth and Planetary Sciences             | Environment   | Faculty of Science                                 |
| Economics                                | N/A   | Faculty of Arts                                    |
| Educational Psychology                   | N/A   | Faculty of Education                               |
| Educational Studies                      | Gender and Women's Studies, Language Acquisition                            | Faculty of Education                               |
| Electrical Engineering                   | N/A   | Faculty of Engineering                             |
| English                                  | N/A   | Faculty of Arts                                    |
| Entomology                               | Environment, Neotropical Environment  | Faculty of Agricultural and Environmental Sciences |
| Epidemiology                             | N/A   | Faculty of Medicine                                |
| Experimental Medicine                    | Environment   | Faculty of Medicine                                |
| Experimental Surgery (Surgical Research) | N/A   | Faculty of Medicine                                |
| Food Science and Agricultural Chemistry  | N/A   | Faculty of Agricultural and Environmental Sciences |
| French Language and Literature           | Gender and Women's Studies  | Faculty of Arts                                    |
| Geography                                | Environment, Gender and Women's Studies, Neotropical Environment            | Faculty of Arts, Faculty of Science                |
| German                                   | N/A   | Faculty of Arts                                    |
| Hispanic Studies                         | N/A   | Faculty of Arts                                    |
| History                                  | N/A   | Faculty of Arts                                    |
| Human Genetics                           | Bioinformatics  | Faculty of Medicine                                |
| Human Nutrition                          | N/A   | Faculty of Agricultural and Environmental Sciences |
| Information Studies                      | N/A   | Faculty of Education                               |

| Program                          | Options   | Offered by Faculty/School                          |
|----------------------------------|---|--|
| Islamic Studies                  | Gender and Women's Studies  | Faculty of Arts                                    |
| Linguistics                      | Language Acquisition  | Faculty of Arts                                    |
| Management                       | N/A   | Desautels Faculty of Management                    |
| Mathematics and Statistics       | Bioinformatics  | Faculty of Arts, Faculty of Science                |
| Mechanical Engineering           | N/A   | Faculty of Engineering                             |
| Microbiology                     | N/A   | Faculty of Agricultural and Environmental Sciences |
| Microbiology and Immunology      | Bioinformatics, Environment   | Faculty of Medicine                                |
| Mining and Materials Engineering | N/A   | Faculty of Engineering                             |
| Music                            | (Composition, Music Education, Musicology, Music Technology, Sound Recording, Theory), Gender and Women's Studies | Schulich School of Music                           |
| Neuroscience                     | N/A   | Faculty of Medicine                                |
| Nursing                          | Psychosocial Oncology   | Ingram School of Nursing                           |
| Occupational Health              | N/A   | Faculty of Medicine                                |
| Parasitology                     | Bioinformatics, Environment   | Faculty of Agricultural and Environmental Sciences |
| Pathology                        | N/A   | Faculty of Medicine                                |
| Pharmacology                     | Chemical Biology  | Faculty of Medicine                                |
| Philosophy                       | Environment, Gender and Women's Studies   | Faculty of Arts                                    |
| Physics                          | N/A   | Faculty of Science                                 |
| Physiology                       | Bioinformatics  | Faculty of Medicine                                |
| Plant Science                    | Bioinformatics, Environment, Neotropical Environment  | Faculty of Agricultural and Environmental Sciences |
| Political Science                | Gender and Women's Studies  | Faculty of Arts                                    |
| Psychology                       | Language Acquisition, Psychosocial Oncology   | Faculty of Arts, Faculty of Science                |
| Rehabilitation Science           | N/A   | School of Physical and Occupational Therapy        |
| Religious Studies                | Gender and Women's Studies  | Faculty of Religious Studies                       |
| Renewable Resources              | Environment, Neotropical Environment  | Faculty of Agricultural and Environmental Sciences |
| Russian                          | N/A   | Faculty of Arts                                    |
| School/Applied Child Psychology  | N/A   | Faculty of Education                               |
| Social Work                      | N/A   | Faculty of Arts                                    |
| Sociology                        | Environment, Gender and Women's Studies   | Faculty of Arts                                    |

**Joint Doctor of Philosophy Degrees**

The following joint Ph.D. programs are offered:

- Nursing (McGill / Université de Montréal)
- Management (McGill / Concordia / H.E.C. / UQAM)
- Social Work (McGill / Université de Montréal)

**Ad Hoc Doctor of Philosophy Degrees (Ph.D. (Ad Hoc))**

Several departments offer the possibility of directly entering a Ph.D. program on an *ad hoc* basis, or, with the permission of the supervisor and the approval of the Graduate Program Director, exceptional students may transfer from the master's program to the *ad hoc* Ph.D. program.

| Program                            | Options | Offered by Faculty/School |
|------------------------------------|---------|---------------------------|
| East Asian Studies                 | N/A     | Faculty of Arts           |
| Italian Studies                    | N/A     | Faculty of Arts           |
| Kinesiology and Physical Education | N/A     | Faculty of Education      |

| Program        | Options | Offered by Faculty/School |
|----------------|---------|---------------------------|
| Psychiatry     | N/A     | Faculty of Medicine       |
| Urban Planning | N/A     | Faculty of Engineering    |

#### 4.5 Postdoctoral Research

See [section 8: Postdoctoral Research](#) for information about postdoctoral research at McGill University.

#### 4.6 Graduate Diplomas and Graduate Certificates

The graduate diplomas and graduate certificates listed below are programs of study under the academic supervision of Graduate and Postdoctoral Studies. The prerequisite for a diploma or certificate is an undergraduate degree in the same discipline.

##### Graduate Diplomas are offered in:

|                                 |  |
|---------------------------------|--|
| Clinical Research               | Professional Performance                     |
| Epidemiology                    | Public Accountancy (Chartered Accountancy)   |
| Library and Information Studies | Registered Dietician Credentialing (R.D.)    |
| Mining Engineering              | School/Applied Child Psychology (Post-Ph.D.) |
| Neonatal Nurse Practitioner     | Surgical Health Care Research                |
| Primary Care Nurse Practitioner |  |

These diploma programs consist of at least two terms of full-time study or the equivalent.

##### Graduate Certificates are offered in:

|   |                                       |
|---|---------------------------------------|
| Assessing Driving Capabilities                                  | Educational Leadership 1              |
| Air and Space Law   | Educational Leadership 2              |
| Bioinformatics  | Library and Information Studies       |
| Bioresource Engineering (Integrated Water Resources Management) | Post-M.B.A.                           |
| Biotechnology   | Teaching English as a Second Language |
| Chronic Pain Management   | Theory in Primary Care                |
| Comparative Law   | Theory in Neonatology                 |

All graduate regulations apply to graduate diploma and graduate certificate candidates.



**Note:** The School of Continuing Studies offers graduate diplomas and graduate certificates that are not under the academic supervision of Graduate and Postdoctoral Studies. To see a list of the programs offered refer to the School of Continuing Studies *Programs, Courses and University Regulations* publication available at [www.mcgill.ca/study](http://www.mcgill.ca/study).

## 5 Program Requirements

### 5.1 Master's Degrees

#### Residence Requirements – Master's Degrees

Refers to the number of terms (or years) students must be registered on a full-time basis to complete their program. Students are NOT permitted to graduate until they have fulfilled the residence requirement (or paid the corresponding fees) in their program.

- The following master's programs have a minimum residence requirement of **three full-time terms**: M.Arch, M.A., M.Eng., LL.M., M.Mus. (**except** M.Mus. in Sound Recording), M.Sc., M.S.W., M.Sc.A. (**except** M.Sc.A. in Communication Sciences and Disorders).
- The following master's programs have a **minimum** residence requirement of **four full-time terms**: M.L.I.S.; M.Mus. in Sound Recording; M.U.P.; M.A. (60 credits – Counselling Psychology – thesis; 78 credits – Educational Psychology); M.A. Teaching and Learning – Non-Thesis; M.Sc.A. in Communication Sciences and Disorders; S.T.M., Religious Studies.
- The residence requirement for the master's program in Education (M.Ed.); Library and Information Studies (M.L.I.S.); Management (M.B.A.); Religious Studies (S.T.M.); M.A. Counselling Psychology – Non-Thesis; M.A. Teaching and Learning – Non-Thesis; M.Sc. in Public Health – Non-Thesis; M.Sc.A. Nursing; M.Sc.A. Occupational Therapy; M.Sc.A. Physical Therapy; and students in part-time programs is determined on a per course basis. Residence requirements are fulfilled when students complete all course requirements in their respective programs.
- For master's programs structured as Course, Project or Non-Thesis options where the program is pursued on a part-time basis, residence requirements are normally fulfilled when students complete all course requirements in their respective programs (minimum 45 credits or a minimum of three full-time terms) and pay the fees accordingly.

These designated periods of residence represent minimum time requirements. There is no guarantee that the work for the degree can be completed in this time. Students must register for such additional terms as are needed to complete the program.

#### Coursework – Master's Degrees

Program requirements are outlined in the relevant departmental sections of the Graduate and Postdoctoral Studies *Programs, Courses and University Regulations* publication, available at [www.mcgill.ca/study](http://www.mcgill.ca/study).

The department concerned will examine the student's previous training and then decide which of the available courses in the area of specialization or related fields are required to bring the candidate to the proper level for the master's degree. Due account will be taken of relevant courses passed at any recognized university.

As a rule, no more than one-third of the McGill program formal coursework (not thesis, project, stage, or internship) can be credited with courses from another university.

Non-thesis degrees normally specify the course program which the candidate must follow.

The candidate is required to pass, with a grade of B- or better, all those courses that have been designated by the department as forming a part of the program, including additional requirements.

Students taking courses at another university must obtain a minimum grade of B- (65%) if the course is to be credited toward their McGill degree. In the cases where only a letter grade is used, a B- is the minimum passing grade and no equivalent percentage will be considered. In the cases where only a percentage grade is used, 65% is the minimum passing grade.

If courses were not used for a degree, they could be **credited** toward a McGill degree, keeping in mind that a maximum of one-third of the coursework (not thesis, project, stage, internship, and practicum) can be credited. If an **exemption** is granted, it must be replaced by another graduate course at McGill toward the degree. No double counting is ever allowed. This regulation also applies to doctoral programs.

#### Research and Thesis – Master's Degrees

All candidates for a research degree must present a thesis based on their own research. The total number of credits allotted to the thesis in any master's program must not be less than 24. The title of the thesis and names of examiners must be forwarded on a *Nomination of Examiners* form, in accordance with the dates on [www.mcgill.ca/importantdates](http://www.mcgill.ca/importantdates), through the chair of the department concerned at the same time as the thesis is submitted to Graduate and Postdoctoral Studies. A thesis for the master's degree, while not necessarily requiring an exhaustive review of work in the particular field of study, or a great deal of original scholarship, must show familiarity with previous work in the field and must demonstrate the ability to carry out research and to organize results, all of which must be presented in good literate style. The thesis will not normally exceed 100 pages; in some disciplines, shorter texts are preferred. Guidelines and deadlines are available at [www.mcgill.ca/gps/thesis/guidelines](http://www.mcgill.ca/gps/thesis/guidelines).

#### Language Requirements – Master's Degrees

Most master's degree programs do not include language requirements, but candidates who intend to proceed to a doctoral degree should take note of any language requirements and are strongly advised to take the examinations in at least one language while working for the master's degree.

## 5.2 Doctoral Degrees

### Residence Requirements – Doctoral

Refers to the numbers of terms (or years) students must be registered on a full-time basis to complete their program. Students are not permitted to graduate until they have fulfilled the residence requirement (or paid the corresponding fees) in their program.

Candidates entering Ph.D. 1 must follow a program of at least three years' residency at the University; this is a minimum requirement, and there is no guarantee that the work of the degree can be completed in this time, but students are expected to complete within the maximum specified period. Only exceptional candidates holding a bachelor's degree will be considered for direct admission to Ph.D. 1 level.

It is required that candidates spend the greater part of each summer working on their theses, and those who do not do so are unlikely to complete a satisfactory thesis in the prescribed minimum time (see [section 8.3: Vacation Policy for Graduate Students and Postdocs](#)).

A student who has obtained a master's degree at McGill University or at an approved institution, in a relevant subject and is proceeding to a Ph.D. degree will, on the recommendation of the department, be admitted to Ph.D. 2; in this case, the residency requirement for the program is two years.

In the doctoral program, students must be registered on a full-time basis for one more year after completion of the residency (i.e., Ph.D. 4 year) before continuing as Additional Session students until completion of the program.



**Note:** The master's degree must have been awarded before initial registration in the doctoral program; otherwise, the admission level will be at Ph.D. 1 and residency will be extended to three years. Once the level of admission is approved, it will not be changed after obtaining the master's degree if the date falls after registration in the program. If a previous awarded degree is a condition of admission, it must be fulfilled before registration in another program.

As a rule, no more than one-third of the McGill program formal coursework can be credited with courses from another university.

### Comprehensive Examinations – Doctoral

A comprehensive examination or its equivalent is usually held near the end of Ph.D. 2. The results of this examination determine whether or not students will be permitted to continue in their programs. The methods adopted for examination and evaluation and the areas to be examined are specified by departmental regulations approved by the Dean of Graduate and Postdoctoral Studies. It is the responsibility of students to inform themselves of these details at the commencement of their programs. For more information, see *Programs, Courses and University Regulations > University Regulations and Resources > Graduate > Guidelines and Policies > : Ph.D. Comprehensives Policy*.

### Language Requirements – Doctoral

Most graduate departments in the Faculties of Agricultural and Environmental Sciences, Education, Engineering, Management, Medicine, and Science do not require a language examination. Students should inquire in their departments if there are any such requirements or whether any other requirements have been substituted for those relating to languages.

Graduate departments in the Faculties of Arts, Music, and Religious Studies usually require proficiency in one or two languages other than English. In all cases, **students should consult departmental regulations concerning language requirements**.

Language requirements for the Ph.D. degree are met through demonstrated reading knowledge. The usual languages are French, German, or Russian, but in particular instances another language may be necessary.

**All language requirements must be fulfilled and the grades reported before submission of the thesis to GPS (Thesis Section).**

Students must contact their departments to make arrangements to take the Language Reading Proficiency Examinations. Students may, however, demonstrate competence by a pass standing in two undergraduate language courses taken at McGill (see departmental regulations).

Candidates are advised to discharge their language requirements as early in their program as possible.

Students expecting to enrol in Professional Corporations in the province of Quebec are advised to become fluent in both spoken and written French.

Courses in French language are available at the English and French Language Centre. The teaching is intensive and class sizes are kept small. While undergraduate students are given preference, graduate students who are certain they can devote sufficient time to the work may enrol.

### Thesis – Doctoral

The thesis for the Ph.D. degree must display original scholarship expressed in good literate style and must be a distinct contribution to knowledge. **Formal notice of a thesis title and names of examiners must be submitted to the Thesis Section of GPS on the *Nomination of Examiners* form in accordance with the dates on [www.mcgill.ca/importantdates](http://www.mcgill.ca/importantdates), at the same time as the thesis is submitted.** The list of examiners must be approved by the Department Chair, the supervisor and the student. The Thesis Section of GPS should be notified of any subsequent change of title as early as possible. Guidelines and deadlines are available at [www.mcgill.ca/gps/thesis/guidelines](http://www.mcgill.ca/gps/thesis/guidelines).

Seven copies of the thesis must be provided by the candidate. Of these, two copies will be retained by the University and five copies returned to the candidate. Some departments may require one or more additional copies. The final corrected copy is submitted electronically.

Special regulations for the Ph.D. degree in particular departments are stated in the entries of those departments.

### Thesis Oral Examination – Doctoral

After the thesis has been received and approved, a final oral examination is held on the subject of the thesis and subjects intimately related to it. This is conducted in the presence of a Committee of at least five members presided over by a Pro-Dean nominated by Graduate and Postdoctoral Studies. The Chair of the candidate's department and the Thesis Supervisor are regularly invited to be members of the Committee; at least one member of the Committee is appointed from outside the candidate's department. Guidelines are available at [www.mcgill.ca/gps/thesis/guidelines](http://www.mcgill.ca/gps/thesis/guidelines).

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## 5.3 Ad Personam Programs (Thesis Option Only)

In very rare circumstances, an applicant who wishes to engage in Master's (thesis option only) or Ph.D. studies of an interdisciplinary nature involving joint supervision by two departments, each of which is authorized by the Government of Quebec to offer its own graduate programs, may be admitted to an *Ad Personam* program. For more information, see [www.mcgill.ca/gradapplicants/apply/prepare#program](http://www.mcgill.ca/gradapplicants/apply/prepare#program) and contact the relevant department.

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## 5.4 Coursework for Graduate Programs, Diplomas, and Certificates

Upper-level undergraduate courses (excluding 500 level) may not be considered for degrees, diplomas, and certificates unless they are already listed as required courses in the approved program description. If an upper-level undergraduate course (excluding 500 level) is taken by a graduate student, it must come as a recommendation from the Graduate Program Director in the department. The recommendation must state if the undergraduate course is an additional requirement for the program (must obtain B- or better) or if the course is extra to the program (will be flagged as such on the record and fees will be charged). See document at [www.mcgill.ca/gps/students/registration#course](http://www.mcgill.ca/gps/students/registration#course).

English and French language courses offered by the French Language Centre (Faculty of Arts) or the School of Continuing Studies may not be taken for coursework credits toward a graduate program.

All substitutions for coursework in graduate programs, diplomas, and certificates must be approved by GPS.

Courses taken at other institutions to be part of the requirements of a program of studies must be approved by GPS before registration. Double counting is not permitted.

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## 6 Graduate Admissions and Application Procedures

Website: [www.mcgill.ca/gradapplicants](http://www.mcgill.ca/gradapplicants)

Email: [servicepoint@mcgill.ca](mailto:servicepoint@mcgill.ca)

**Deadline: Admission to graduate studies operates on a rolling basis; complete applications and their supporting documentation must reach departmental offices on or before the Date for Guaranteed Consideration specified by the department. To be considered for entrance fellowships, where available, applicants must verify the deadlines with individual departments. Meeting minimum admission standards does not guarantee admission.**

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### 6.1 Application for Admission

**Revision, October 2012. Start of revision.**

Application information and the online application form are available at [www.mcgill.ca/gradapplicants/apply](http://www.mcgill.ca/gradapplicants/apply). Applicants (with some exceptions) are required to provide the names and email addresses of two instructors familiar with their work and who are willing to provide letters of reference in support of the applicant. McGill will request the reference letters on behalf of the applicant. All applicants must themselves upload an unofficial copy of their complete academic record from each university-level institution attended to date. If admitted, each student will be required to send, or ask the appropriate university authorities to send, an official or certified copy of their complete, final academic record from each university-level institution attended to date. McGill graduates do not need to submit McGill transcripts. See [www.mcgill.ca/gradapplicants/apply/submitting-your-documents/sending-official-doc](http://www.mcgill.ca/gradapplicants/apply/submitting-your-documents/sending-official-doc) for instructions on mailing official documents to McGill. Please note that all documents submitted to McGill University in support of an application to be admitted, including, but not limited to, transcripts, diplomas, letters of reference, and test scores, become the property of McGill University and will not be returned to the applicant or issuing institution under any circumstance.

A **non-refundable** fee of \$100 in Canadian funds **must** accompany each application; otherwise, **it cannot be submitted**. This sum must be paid by credit card when submitting the online application form and is non-refundable. Candidates for Special, Visiting, and Qualifying status must apply and pay the application fee every year (i.e., every Fall term).

It is recommended that applicants submit a list of the titles of courses taken in the major subject, since transcripts often give code numbers only. **Transcripts written in a language other than English or French must be accompanied by a translation prepared by a licensed translator.** An explanation of the grading system used by the applicant's university is essential. The applicant should also indicate the major subject area in which further study is desired.

Completed applications, with uploaded supporting documents, must be submitted according to individual department Dates for Guaranteed Consideration. Applicants should contact the department concerned, or see: [www.mcgill.ca/gradapplicants/programs](http://www.mcgill.ca/gradapplicants/programs). International students are advised to apply well in advance of the Date for Guaranteed Consideration as immigration procedures may be lengthy. Applications received after the prescribed Dates for Guaranteed Consideration may or may not be considered, at the discretion of the department. Candidates will be notified of acceptance or refusal by Enrolment Services.

Admission to graduate programs at McGill is highly competitive and the final decision rests with the Graduate Admissions Committee. Admission decisions are not subject to appeal or reconsideration.

**Revision, October 2012. End of revision.**

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### 6.2 Admission Requirements (minimum requirements to be considered for admission)

**Revision, October 2012. Start of revision.**



**Note:** The following admission requirements are the minimum standard for applicants to McGill's Graduate and Postdoctoral Studies programs. Some graduate units may require additional qualifications or a higher minimum CGPA; prospective students are strongly urged to consult the unit concerned regarding specific requirements set for their program of interest.

Applicants should be graduates of a university of recognized reputation and hold a bachelor's degree or its equivalent, as determined by McGill, in a subject closely related to the one selected for graduate work.

The applicant must present evidence of academic achievement: a minimum standing equivalent to a cumulative grade point average (CGPA) of 3.0 out of a possible 4.0 or a CGPA of 3.2/4.0 for the last two full-time academic years. High grades are expected in courses considered by the department to be preparatory to the graduate program. Some departments impose additional or higher requirements.



See [www.mcgill.ca/gradapplicants/apply/prepare/requirements/international-degree-equivalency](http://www.mcgill.ca/gradapplicants/apply/prepare/requirements/international-degree-equivalency) for information on grade equivalencies and degree requirements from countries in Europe and around the world. These equivalencies and requirements are provided for information only and are subject to change without notice.

Admission to graduate programs at McGill is highly competitive and the final decision rests with the Graduate Admissions Committee. Admission decisions are not subject to appeal or reconsideration.

**Revision, October 2012. End of revision.**

## 6.3 Application Procedures (for All Admissions Starting Summer 2013)

**Revision, October 2012. Start of revision.**

### Application Checklist

All supplemental application materials and supporting documents must be uploaded directly to the McGill admissions processing system. See [www.mcgill.ca/gradapplicants/apply/submitting-your-documents](http://www.mcgill.ca/gradapplicants/apply/submitting-your-documents) for information and instructions.

1. **Online Application for Admission form:** [www.mcgill.ca/gradapplicants/apply/ready](http://www.mcgill.ca/gradapplicants/apply/ready).
2. **Application fee:** \$100 for each form you submit (you may indicate two programs on each form), payable by credit card when you submit the form. Some programs may charge additional fees. If applicable these will be automatically charged when you submit the application form.
3. **Transcripts:** your complete record of study from each university-level institution you have attended to date. Uploaded copies will be considered as unofficial; final, official copies will be required once you are offered admission.
4. **Reference letters:** on the application form you must provide the names and email addresses of at least two professors who are familiar with your academic work. McGill will contact these referees and invite them to upload references on your behalf. N.B. some departments require more than two referees; please consult *Admission Requirements and Application Procedures* for each department at [www.mcgill.ca/gradapplicants/programs](http://www.mcgill.ca/gradapplicants/programs).
5. **TOEFL/IELTS, GRE, GMAT results:** when registering for the test please ensure that you request that results be sent directly to McGill University. McGill will then receive the results electronically, directly from the testing agency.

For detailed information regarding additional documents that may be required by certain departments, please consult *Admission Requirements and Application Procedures* for each department at [www.mcgill.ca/gradapplicants/programs](http://www.mcgill.ca/gradapplicants/programs).

### 6.3.1 Document Checklist Terms

The following terms appear on the Document Checklist and are items or documents that you may be required to upload as part of your application for admission. Please ensure that your use of certain terms conforms to the following definitions:

**Audition:** a trial performance where a performer demonstrates their suitability or skill.

**Curriculum Vitae:** an overview of the applicant's experience and other qualifications, including employment, academic credentials, publications, contributions, and significant achievements.

**GMAT:** Graduate Management Aptitude Test (see [section 6.4: Admission Tests](#))

**GRE:** Graduate Records Examination (see [section 6.4: Admission Tests](#))

**Interview:** a conversation between the applicant and a McGill representative, using a structured, standardized approach to allow for comparison and analysis of responses from all applicants interviewed; in person, via telephone, *Skype*, etc.

**Personal Statement:** an essay in which the applicant describes their reasons for applying to graduate studies and indicating qualifications, qualities, or circumstances the applicant feels to be significant; usually provides information about educational and professional goals and discusses the applicant's interest in the desired field of study.

**Portfolio:** a collection of the applicant's best work to date, selected by them, and intended to show their mastery of a given style or variety of styles; different samples of their artistic work.

**Recording:** an unedited recording (audio or video) of the applicant performing at least two contrasting pieces; minimum 20 minutes.

**Research Proposal:** a detailed description of the proposed program of research, including proposed Thesis Supervisor(s); describes the research background, significance, methodology, and references; may include expected results; may include a detailed curriculum vitae.

**TOEFL:** Test of English as a Foreign Language (see [section 6.5: Competency in English](#))

**Writing Sample:** a recent sample of the applicant's written work, on any topic (not necessarily within the desired field of graduate study) and not necessarily previously submitted for evaluation or publication.

**Written Work:** a sample of the applicant's written work, drawn from essays, papers or other work previously submitted for academic evaluation or publication, and falling within the desired field of graduate study.

**Revision, October 2012. End of revision.**

## 6.4 Admission Tests

**Revision, October 2012. Start of revision.**

### Graduate Record Examination (GRE)

The Graduate Record Examination (GRE) (Educational Testing Service, Princeton, NJ 08540) consists of a relatively advanced test in the candidates' specialty, and a general test of their attainments in several basic fields of knowledge for which no special preparation is required or recommended. It is offered at many centres, including Montreal, several times a year; the entire examination takes about eight hours, and there is a registration fee. Refer to [www.ets.org/gre](http://www.ets.org/gre) for further information. Only some departments require applicants to write the GRE examination, but all applicants who have written either the general aptitude or the advanced test are advised to ensure that official test results are sent to McGill directly by the testing service.

This credential is of special importance in the case of applicants whose education has been interrupted, or has not led directly toward graduate study in the subject selected. In such cases the department has the right to insist on a report from the Graduate Record Examination or some similar test. High standing in this examination will not by itself guarantee admission. The Miller Analogies Test may be used similarly. Some departments of the Faculty of Education also require the taking of various tests.

### Graduate Management Admissions Test (GMAT)

Applicants to graduate programs in Management must ensure that official results are released to McGill by the Graduate Management Admission Council (GMAC). The test is a standardized assessment offered by the GMAC to help business schools assess candidates for admission. For further information, see [www.mba.com/the-gmat](http://www.mba.com/the-gmat).

**Revision, October 2012. End of revision.**

## 6.5 Competency in English

Applicants to graduate studies must demonstrate an adequate level of proficiency in English **prior to admission**, regardless of citizenship status or country of origin.

Normally, applicants meeting any one of the following conditions are NOT required to submit proof of proficiency in English:

1. Mother tongue (language first learned and still used on a daily basis) is English.
2. Has obtained (or is about to obtain) an undergraduate or graduate degree from a recognized foreign institution where English is the language of instruction.
3. Has obtained (or is about to obtain) an undergraduate or graduate degree from a recognized institution in Canada or the United States of America (anglophone or francophone).
4. Has lived and attended university, or been employed, for at least four consecutive years, in a country where English is the acknowledged primary language.

Applicants who do not meet any of the above-listed conditions must demonstrate proficiency in English using **one** of the following options:

1. TOEFL (Test of English as a Foreign Language): minimum acceptable scores are:

### Competency in English

iBT (Internet-based test)

PBT (paper-based test)

CBT (computer-based test)\*

86 overall (no less than 20 in each of the four component scores)

550

\* The CBT is no longer being offered and CBT results are no longer considered valid, or being reported by ETS.

N.B. an institutional version of the TOEFL is not acceptable.

2. IELTS (International English Language Testing System): a band score of 6.5 or greater.
3. MELAB (Michigan English Language Assessment Battery): a grade of 85% or higher.
4. University of Cambridge ESOL Certificate in Advanced English (CAE): a grade of "B" (Good) or higher.
5. University of Cambridge ESOL Certificate of Proficiency in English (CPE): a grade of "C" (Pass) or higher.
6. Edexcel London Test of English – Level 5 – with an overall grade of at least "Pass."
7. McGill Certificate of Proficiency in English or McGill Certificate of Proficiency – English for Professional Communication: Certificate of Proficiency awarded. McGill Certificate of Proficiency in English or McGill Certificate of Proficiency – English for Professional Communication: Certificate of Proficiency awarded.

In each case, applicants must ensure that official test results are sent to McGill directly by the testing service. Applications cannot be considered if test results are not available. These scores are general minima; some departments may set higher requirements.

*Revised – July 2008*

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## 6.6 Admission to a Qualifying Program

Some applicants whose academic degrees and Standing entitle them to serious consideration for admission to graduate studies, but who are considered inadequately prepared in the subject selected may be admitted to a Qualifying Program for a master's. The undergraduate-level courses to be taken in a Qualifying Program will be prescribed by the department concerned.

Qualifying students are registered in graduate studies, **but not as candidates for a degree**. Only one Qualifying year (i.e., two full-time terms) is permitted.

In all cases, after the completion of a Qualifying year or term, an applicant interested in commencing a degree program must apply for admission by the Dates for Guaranteed Consideration. Successful completion of the work in the Qualifying Program (B- in all courses) does not automatically entitle the student to proceed toward a degree. Qualifying year students must apply for admission to the program for which they seek qualification.

In cases where a department recommends a change of registration from Qualifying Program (Fall) to Master's Degree First Year (Winter), **students must apply to the degree program by the Winter departmental Dates for Guaranteed Consideration**. A Qualifying year applicant admitted to a Winter term as a first term of studies must apply for admission for a Fall term as his/her second term of studies.

Students who are ineligible for a Qualifying Program may apply to the appropriate undergraduate faculty for admission as regular or Special Students, and seek admission to graduate studies at a later date. The normal admission requirements must be met and the usual procedures followed.

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## 6.7 Admission to a Second Degree Program

A candidate with a given higher degree may apply for admission to a second degree program at the same level but **in a different subject**. The normal admission requirements must be met and all the usual procedures followed.

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## 6.8 Admission to Two Degree Programs

**Revision, December 2012. Start of revision.**

Students may, with special permission granted by the Graduate Admissions Committee (composed of the Dean and Associate Deans of Graduate and Postdoctoral Studies) and in consultation with the Graduate Admissions Unit of Enrolment Services, be admitted to two degree programs or to two departments or faculties. Students are **never** permitted to pursue two **full-time** degree programs concurrently.

**Revision, December 2012. End of revision.**

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## 6.9 Admission to an Ad Personam Joint Program

*Ad Personam* joint graduate programs are restricted to Master's thesis option and Ph.D. programs. Approval for the joint program must be obtained from Graduate and Postdoctoral Studies. The request shall be signed by the Chairs of both departments involved and shall explicitly list the conditions imposed. The student shall undertake research under the joint supervision of both departments.

This program is described in more detail at [www.mcgill.ca/gradapplicants/apply/prepare#program](http://www.mcgill.ca/gradapplicants/apply/prepare#program).

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## 6.10 Reinstatement and Admission of Former Students

**Revision, December 2012. Start of revision.**

Students who have not been registered for a period of less than two years and who have not officially withdrawn from the University by submitting a signed Withdrawal Form to Service Point are eligible to be considered for reinstatement into their program. The student's department must recommend, in writing, that the student be reinstated, stipulating any conditions for reinstatement that it deems appropriate. If the student's department chooses not to recommend reinstatement, the student may appeal to the Associate Dean (Graduate and Postdoctoral Studies). The decision of the Associate Dean (Graduate and Postdoctoral Studies) shall be final and not subject to further appeal.

**Revision, December 2012. End of revision.**

Reinstatement fees will be charged in addition to the fees due for the academic session into which the student has been reinstated. The amount of the reinstatement fees is the tuition portion of fees owed for all unregistered terms, up to a maximum of two years just prior to the term of reinstatement.

If an individual has not registered for a period of more than two years, their student file will be closed. These individuals and those who have formally withdrawn may be considered for admission. Applicants' admission applications will be considered as part of the current admission cycle, in competition with other people applying during that cycle and in accordance with current graduate admission procedures and policies.

Procedure: Requirements for completion of the program will be evaluated. Some of these requirements may need to be redone or new ones may be added. Applicants must inquire about the fees that will be charged.

Revised – Council of February 9, 2004.

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## 6.11 Deferral of Admission

Under exceptional circumstances, an admission for a particular semester can be considered for a deferral. This can be considered only if the student has not registered. If the student has already registered, no deferral can be granted. The student must withdraw from the University and apply for admission to a later term.

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## 7 Fellowships, Awards, and Assistantships

Graduate and Postdoctoral Studies  
(Fellowships and Awards Section)  
James Administration Building, Room 400  
845 Sherbrooke Street West  
Montreal, QC H3A 0G4  
Telephone: 514-398-3990  
Fax: 514-398-2626  
Website: [www.mcgill.ca/gps/students/funding/students-postdocs](http://www.mcgill.ca/gps/students/funding/students-postdocs)

The Fellowships and Awards section of Graduate and Postdoctoral Studies provides processing services for many sources of support for Canadian and non-Canadian students, both new to McGill and continuing. Further information on these and other sources of funding can be found in various publications on the Fellowships and Awards web pages. The [Graduate Fellowships and Awards Calendar](#) lists all internal awards as well as numerous external awards.

Entrance Fellowships are awarded on the basis of the application for admission, upon nomination by academic departments. Most internal fellowships are awarded in this manner—please contact the proposed academic department directly for further information.

Research assistantships, teaching assistantships, and stipends from professors' research grants are handled by individual academic departments at McGill. Fellowships, assistantships, and stipends are used to make funding packages for graduate students. All assistantship and stipend inquiries should be directed to departments.

A small number of citizens from countries whose governments have entered into agreements on tuition fees with Quebec may be exempted from the supplemental tuition fees normally required of international students. All French citizens and a limited number of citizens of countries in the list, which can be found at [www.mels.gouv.qc.ca/sections/publications/index.asp?page=fiche&id=1039](http://www.mels.gouv.qc.ca/sections/publications/index.asp?page=fiche&id=1039), are eligible for such exemptions. For more information and the necessary application materials, see [www.mels.gouv.qc.ca/international/index\\_en.asp?page=progExemp](http://www.mels.gouv.qc.ca/international/index_en.asp?page=progExemp). The list of organizations where students should apply can be accessed from this website.

Differential Fee Waivers (DFWs) for international students provide eligible non-Canadian graduate students with waivers of the international tuition fee supplement. There are no application forms for differential fee waivers, since these are awarded on the basis of departmental nominations made to the Fellowships and Awards section. Eligible students should contact their McGill department.

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## 8 Postdoctoral Research

Students must inform themselves of University rules and regulations and keep abreast of any changes that may occur. The *Postdoctoral Research* section of this publication contains important details required by postdoctoral scholars during their studies at McGill and should be periodically consulted, along with other sections and related publications.

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### 8.1 Postdocs

Postdocs are recent graduates with a Ph.D. or equivalent (i.e., Medical Specialist Diploma) engaged by a member of the University's academic staff, including Adjunct Professors, to assist him/her in research.

Postdocs must be appointed by their department and registered with Enrolment Services in order to have access to University facilities (library, computer, etc.).

## 8.2 Guidelines and Policy for Academic Units on Postdoctoral Education

The general guidelines listed below are meant to encourage units to examine their policies and procedures to support postdoctoral education. Every unit hosting Postdocs should have explicitly stated policies and procedures for the provision of postdoctoral education as well as established means for informing Postdocs of policies, procedures, and privileges (e.g., orientation sessions, handbooks, etc.), as well as mechanisms for addressing complaints. Academic units should ensure that their policies, procedures and privileges are consistent with these guidelines and the Charter of Students' Rights. For their part, Postdocs are responsible for informing themselves of policies, procedures, and privileges.

### 1. Definition and Status

i. Postdoctoral status will be recognized by the University in accordance with Quebec provincial regulations. Persons may only be registered with postdoctoral status for a period of up to five years from the date they were awarded a Ph.D. or equivalent degree. Time allocated to parental or health leave is added to this period of time. Leaves for other reasons, including vacation leave, do not extend the term. Postdocs must do research under the supervision of a McGill professor, including Adjunct Professors, who is a member of McGill's academic staff qualified in the discipline in which training is being provided and with the abilities to fulfil responsibilities as a supervisor of the research and as a mentor for career development. They are expected to be engaged primarily in research with minimal teaching or other responsibilities.

### 2. Registration

i. Postdocs must be registered annually with the University through Enrolment Services. Initial registration will require an original or notarized copy of the Ph.D. diploma. Registration will be limited to persons who fulfil the definition above and for whom there is an assurance of appropriate funding and where the unit can provide assurance of the necessary resources to permit postdoctoral education.

ii. Upon registration, the Postdoc will be eligible for a University identity card issued by Enrolment Services.

### 3. Appointment, Pay, Agreement of Conditions

i. Appointments may not exceed your registration eligibility status.

ii. In order to be registered as a Postdoc, you must be assured of financial support other than from personal means during your stay at McGill University, equivalent to the minimal stipend requirement set by the University in accordance with guidelines issued by federal and provincial research granting agencies. There are no provisions for paid parental leave unless this is stipulated in the regulations of a funding agency outside the University.

iii. At the outset of a postdoctoral appointment, a written Letter of Agreement for Postdoctoral Education should be drawn up and signed by the Postdoc, the supervisor, and the department head or delegate (see template Letter of Agreement and supporting document—*Commitments of Postdoctoral Scholars and Supervisors*—on the web at [www.mcgill.ca/gps/postdocs/fellows/letter](http://www.mcgill.ca/gps/postdocs/fellows/letter)). This should stipulate, for example, the purpose of the postdoctoral appointment (research training and the advancement of knowledge), the duration of the fellowship/financial support, the modality of pay, the work space, travel funds, and expectations and compensation for teaching and student research supervision. Leaves from postdoctoral education must comply with the Graduate and Postdoctoral Studies Policies for Vacation, Parental/Familial, and Health Leave (see [section 8.3: Vacation Policy for Graduate Students and Postdocs and Programs, Courses and University Regulations > University Regulations and Resources > Graduate > : Health and Parental/Familial Leave of Absence Policy](#)). Any breach of these conditions may result in grievance procedures or the termination of the postdoctoral appointment.

iv. Postdocs with full responsibility for teaching a course should be compensated over and above their fellowship at the standard rate paid to lecturers by their department.

v. The amount of research, teaching, or other tasks that Postdocs engage in over and above postdoctoral activities should conform to the regulations for Postdocs specified by the Canadian research council of their discipline. This applies to all Postdocs, including those whose funding does not come from the Canadian research councils.

### 4. Privileges

i. Postdocs have the same pertinent rights as the ones granted to McGill students in the *Handbook on Student Rights and Responsibilities* ("Green Book"), available at [www.mcgill.ca/secretariat/policies/students](http://www.mcgill.ca/secretariat/policies/students).

ii. Postdocs have full graduate student borrowing privileges in McGill libraries through their identity card.

iii. As a rule, Postdocs who are Canadian citizens or who have Permanent Resident status may take courses for credit. Admission to such courses should be sought by submitting application documents directly to the appropriate program by the Postdoc. They must be admitted by the department offering the courses as Special Students. These Postdocs may only be enrolled as part-time students in non-degree granting programs. They will be charged fees for these courses.

iv. Postdocs may be listed in the McGill directory. The Computing Centre will grant Postdocs email privileges on the same basis as graduate students upon presentation of a valid identity card.

v. The Department of Athletics will grant Postdocs access to sports facilities upon presentation of their identity card. A fee will be charged on an annual or term basis.

vi. Postdocs are mandatory members of the Post-Graduate Students' Society (PGSS) and an annual association fee is automatically charged. PGSS fees are mandatory. Postdocs are permitted membership in the Faculty Club; an annual fee will be charged for this membership.

vii. Postdocs are encouraged to participate in Professional Development Workshops provided by Graduate and Postdoctoral Studies and Teaching and Learning services. These sessions are usually free of charge.

viii. Postdocs have access to the services provided by the Ombudsperson.

ix. Postdocs may enrol as part-time students in the second language written and spoken English/French courses offered by the School of Continuing Studies/French Language Centre. Postdocs will be charged tuition for these courses. International Postdocs may be required to obtain a CAQ and a Study Permit.

x. Access to student services and athletic services are available to the Postdoc on an opt-in basis. Fees are applicable.

#### 5. Responsibilities

i. Postdocs are subject to the responsibilities outlined in the *Handbook on Student Rights and Responsibilities* (“Green Book”), available at [www.mcgill.ca/secretariat/policies/students](http://www.mcgill.ca/secretariat/policies/students).

ii. Each academic unit hosting Postdocs should clearly identify Postdocs’ needs and the means by which they will be met by the unit.

iii. Each academic unit should assess the availability of research supervision facilities, office space, and research funding before recruiting Postdocs.

iv. Some examples of responsibilities of the department are:

- to verify the Postdoc’s eligibility period for registration;
- to provide Postdocs with departmental policy and procedures that pertain to them;
- to oversee the registration and appointment of Postdocs;
- to assign departmental personnel (e.g., Postdoc coordinator and Graduate Program Director) the responsibility for Postdocs;
- to oversee and sign off on the Letter of Agreement for Postdoctoral Education;
- to ensure that each Postdoc has a supervisor, lab and/or office space, access to research operating costs and necessary equipment;
- to include Postdocs in departmental career and placement opportunities;
- to refer Postdocs to the appropriate University policies and personnel for the resolution of conflict that may arise between a Postdoc and a supervisor.

v. Some examples of responsibilities of the supervisor are:

- to uphold and transmit to their Postdocs the highest professional standards of research and/or scholarship;
- to provide research guidance;
- to meet regularly with their Postdocs;
- to provide feedback on research submitted by the Postdocs;
- to clarify expectations regarding intellectual property rights in accordance with the University’s policy;
- to provide mentorship for career development;
- to prepare, sign, and adhere to a Letter of Agreement for Postdoctoral Education.

vi. Some examples of responsibilities of Postdocs are:

- to inform themselves of and adhere to the University’s policies and/or regulations for Postdocs for leaves, for research, and for student conduct as outlined in the *Handbook on Student Rights and Responsibilities* and the Graduate and Postdoctoral Studies *University Regulations and Resources*;
- to submit a complete file for registration to Enrolment Services;
- to sign and adhere to their Letter of Agreement for Postdoctoral Education;
- to communicate regularly with their supervisor;
- to inform their supervisor of their absences.

vii. Some examples of the responsibilities of the University are:

- to register Postdocs;
- to provide an appeal mechanism in cases of conflict;
- to provide documented policies and procedures to Postdocs;
- to provide Postdocs with the necessary information on McGill University student services.

*Approved by Senate, April 2000*

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### 8.3 Vacation Policy for Graduate Students and Postdocs

Graduate students and Postdocs should normally be entitled to vacation leave equivalent to university holidays and an additional total of fifteen (15) working days in the year. Funded students and Postdocs with fellowships and research grant stipends taking additional vacation leave may have their funding reduced accordingly.

*Council of FGSR April 23, 1999*

## 8.4 Leave of Absence for Health and Parental/Familial Reasons

A leave of absence may be granted for maternity or parental reasons or for health reasons (see *Programs, Courses and University Regulations > University Regulations and Resources > Graduate > : Health and Parental/Familial Leave of Absence Policy*).

Such a leave must be requested on a term-by-term basis and may be granted for a period of up to 52 weeks. Students and Postdocs must make a request for such a leave in writing to their department and submit a medical certificate. The department shall forward the request to Enrolment Services. See procedure under *Programs, Courses and University Regulations > University Regulations and Resources > Graduate > : Health and Parental/Familial Leave of Absence Policy*. Students who have been granted such a leave will have to register for the term(s) in question and their registration will show as “leave of absence” on their record. No tuition fees will be charged for the duration of the authorized leave. Research supervisors are not obligated to remunerate students and Postdocs on leave. GPS has prepared a summary table of various leave policies (paid or unpaid) for students and Postdocs paid from the Federal and Quebec Councils through fellowships or research grants. The document is available at [www.mcgill.ca/gps/students/progress/leave-vacation](http://www.mcgill.ca/gps/students/progress/leave-vacation) under “Information on the Funding Council Leave Policies for Graduate Students and Postdoctoral Fellows.”

## 8.5 Postdoctoral Research Trainees

### Eligibility

If your situation does not conform to the Government of Quebec's definition of Postdoctoral Fellow, you may be eligible to attend McGill as a Postdoctoral Research Trainee. While at McGill, you can perform research only (you may not register for courses or engage in clinical practice). Medical specialists who will have clinical exposure and require a training card must register through Postgraduate Medical Education of the Faculty of Medicine—not Graduate and Postdoctoral Studies.

The category of Postdoctoral Research Trainee is for:

**Category 1:** An individual who has completed requirements for the Doctoral degree or medical specialty, but the degree/certification has not yet been awarded. The individual will subsequently be eligible for registration as a Postdoctoral Fellow.

**Category 2:** An individual who is not eligible for Postdoctoral Registration according to the Government of Quebec's definition, but is a recipient of an external postdoctoral award from a recognized Canadian funding agency.

**Category 3:** An individual who holds a professional degree (or equivalent) in a regulated health profession (as defined under CIHR-eligible health profession) and is enrolled in a program of postgraduate medical education at another institution. The individual wishes to conduct the research stage or elective component of his/her program of study at McGill University under the supervision of a McGill professor. The individual will be engaged in full-time research with well-defined objectives, responsibilities, and methods of reporting. The application must be accompanied by a letter of permission from the home institution (signed by the Department Chair, Dean or equivalent) confirming registration in their program and stating the expected duration of the research stage. Individuals who are expecting to spend more than one year are encouraged to obtain formal training (master's or Ph.D.) through application to a relevant graduate program.

**Category 4:** An individual with a regulated health professional degree (as defined under CIHR-eligible health profession), but not a Ph.D. or equivalent or medical specialty training, but who fulfils criteria for funding on a tri-council operating grant or by a CIHR fellowship (up to maximum of five years post-degree).



**Note:** Individuals who are not Canadian citizens or permanent residents must inquire about eligibility for a work permit.

### General Conditions

- The maximum duration is three years;
- the individual must be engaged in full-time research;
- the individual must provide copies of official transcripts/diploma;
- the individual must have the approval of a McGill professor to supervise the research and of the Unit;
- the individual must have adequate proficiency in English, but is not required to provide official proof of English competency to Enrolment Services;
- the individual must comply with regulations and procedures governing research ethics and safety and obtain the necessary training;
- the individual will be provided access to McGill libraries, email, and required training in research ethics and safety. Any other University services must be purchased (e.g., access to athletic facilities);
- the individual must arrange for basic health insurance coverage prior to arrival at McGill and may be required to provide proof of coverage.

## 9 Graduate Studies Guidelines and Policies

Refer to *Programs, Courses and University Regulations > University Regulations and Resources > Graduate > : Guidelines and Policies* for information on the following:

- Guidelines and Regulations for Academic Units on Graduate Student Advising and Supervision
- Policy on Graduate Student Research Progress Tracking
- Ph.D. Comprehensives Policy
- Graduate Studies Reread Policy
- Health and Parental/Familial Leave of Absence Policy
- Failure Policy
- Guideline on Hours of Work

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## 10 Information on Research Policies and Guidelines, Patents, Postdocs, Associates, Trainees

Refer to *Programs, Courses and University Regulations > University Regulations and Resources > Graduate > : Research Policy and Guidelines, Patents, Postdocs, Associates, Trainees* for information on the following:

- Policy on Research Ethics
- Regulations on Research Policy
- Policy on Research Integrity
- Guidelines for Research Involving Human Subjects
- Guidelines for Research with Animal Subjects
- Policy on Intellectual Property
- Regulations Governing Conflicts of Interest
- Safety in Field Work
- Office of Sponsored Research
- Postdocs
- Research Associates

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## 11 Academic Programs

The programs and courses in the following sections have been approved for the 2012–2013 session as listed, but the Faculty reserves the right to introduce changes as may be deemed necessary or desirable.

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### 11.1 Architecture

#### 11.1.1 Location

School of Architecture  
Macdonald-Harrington Building  
815 Sherbrooke Street West  
Montreal, QC H3A 2K6  
Canada

Telephone: 514-398-6700

Fax: 514-398-7372

Website: [www.mcgill.ca/architecture](http://www.mcgill.ca/architecture)

#### 11.1.2 About Architecture

M.Arch. (Professional) (Non-Thesis), M.Arch. (Post-professional) (Non-Thesis), Ph.D.

The School of Architecture at McGill University offers a professional Master of Architecture program, a post-professional Master of Architecture program, and a Ph.D. program. The M.Arch. (Professional) requires the equivalency of the B.Sc. (Architecture) degree for admittance. There are two options for the



completion of this Canadian Architectural Certification Board (CACB)-accredited degree: Design Studio (45 credits) and Design Studio Directed Research (60 credits). The M.Arch. (Post-professional) and the Ph.D. programs are for study beyond the professional degree in architecture. These programs have been conceived to respond to the needs of graduates with some professional experience who wish to acquire more specialized knowledge in architecture. The M.Arch. (Post-professional) program reflects a McGill tradition of academic inquiry and research, and provides an opportunity for a select number of students and staff to work together. The program is organized in such a way as to meet the needs of the professional practitioner and the researcher, and is intended to extend traditional architectural education as well as address new issues.

The M.Arch. (Professional) program is accredited by the CACB and is recognized as accredited by the National Council of Architectural Registration Boards (NCARB) in the U.S.

There are three areas of study in the M.Arch. (Post-professional) and Ph.D. programs: Architectural History and Theory; Cultural Mediations and Technology; and Urban Design and Housing.

Information concerning the duration of programs, documents required of applicants, etc., may be obtained at [www.mcgill.ca/architecture](http://www.mcgill.ca/architecture).

### **Architectural Certification in Canada**

In Canada, all provincial associations recommend a degree from an accredited professional degree program as a prerequisite for licensure. The CACB, which is the sole agency authorized to accredit Canadian professional degree programs in architecture, recognizes two types of accredited degrees: the Bachelor of Architecture and the Master of Architecture. A program may be granted a five-year, three-year, or two-year term of accreditation, depending on its degree of conformance with established educational standards.

Master's degree programs may consist of a pre-professional undergraduate degree and a professional graduate degree, which, when earned sequentially, comprise an accredited professional education. However, the pre-professional degree is not, by itself, recognized as an accredited degree.

Since all provincial associations in Canada recommend any applicant for licensure to have graduated from a CACB-accredited program, obtaining such a degree is an essential aspect of preparing for the professional practice of architecture. While graduation from a CACB-accredited program does not assure registration, the accrediting process is intended to verify that each accredited program substantially meets those standards that, as a whole, comprise an appropriate education for an architect.

Please note that the M.Arch. (Post-professional) degree is not a professional degree and does not satisfy the requirements for certification with the CACB.

### **Professional Programs**

There are two options for the completion of this CACB-accredited degree: Design Studio (45 credits) and Design Studio Directed Research (60 credits).

#### ***section 11.1.5: Master of Architecture (M.Arch.); Professional (Non-Thesis) — Design Studio (45 credits)***

The Master of Architecture (Professional) Non-Thesis – Design Studio concentration requires a minimum of three terms (45 credits) for completion according to an intensive design studio-based curriculum. This option is a three-term consecutive degree (Fall, Winter, Summer) requiring full-time residence for one calendar year. For further information regarding admission eligibility and requirements, please see: [www.mcgill.ca/architecture/programs/professional](http://www.mcgill.ca/architecture/programs/professional).

#### ***section 11.1.6: Master of Architecture (M.Arch.); Professional (Non-Thesis) — Design Studio-Directed Research (60 credits)***

The Master of Architecture (Professional) Non-Thesis – Design Studio Directed Research concentration is a four-term (60-credit) option, which, as a modified version of the regular three-term (45-credit) stream, remains a project-based investigation with an intensive research component. Candidates within this concentration option are assigned a faculty adviser and engage in project-based directed research through an approved curriculum. It concludes with a two-term final project that includes a written component to the project-based investigation. Areas of research interest must be specified as indicated in the application form. Complementary and elective courses are approved in consultation with the adviser. For further information regarding admission eligibility and requirements, please see: [www.mcgill.ca/architecture/programs/professional](http://www.mcgill.ca/architecture/programs/professional).

### **Post-Professional Programs**

The Post-professional master's programs are open to applicants who have a professional degree in architecture. Students holding the McGill B.Arch. (former) or M.Arch. (Professional) (current) degree, or an equivalent professional qualification, with a CGPA of at least 3.0 on a 4.0-point scale, are eligible for admission to the post-professional programs. In special cases, applicants with a degree in a related field may be considered. The primary requirement for the M.Arch. (Post-professional) degree is 30 credits of coursework, to be completed in the first two terms, and a 15-credit research report (Cultural Mediations and Technology, Urban Design, and Housing) or 15-credit project (Architectural History and Theory) that is completed in the Summer term. The residence requirement for the M.Arch. (Post-professional) degree is three academic terms, making it possible for students to obtain their degree after 12 calendar months in the program.

#### ***section 11.1.7: Master of Architecture (M.Arch.); Post-professional (Non-Thesis) — Architectural History and Theory (45 credits)***

Teaching and research in the History and Theory of Architecture program concentrates on the exploration and understanding of the complex connections between history, theory, design, and interdisciplinary concerns, particularly in the areas of philosophy and epistemology. This option is concerned with the reconciliation of ethics and poetics in architectural practice. The master's curriculum, which in most cases is also a required foundation year for a Ph.D. in the field, is simple in terms of course requirements, but demanding in terms of personal commitment to reading and writing. It is particularly suited to students with a professional background in architecture who want to explore and understand the complex connections between history, theory, and design. A thorough understanding of architecture as a cultural phenomenon, leading to a more serious definition of its true essence as it appears in history, is now regarded as crucial by practitioners and teachers who wish to come to terms with the present predicaments of architecture vis-à-vis the contradictions of the contemporary world.

**section 11.1.8: Master of Architecture (M.Arch.); Post-professional (Non-Thesis) — Cultural Mediations and Technology (45 credits)**

The Cultural Mediations and Technology concentration explores the way in which architectural practices are mediated by the broader contexts in which they are rooted and how they in turn shape our understanding of built, cultural, social, technological, and political environments. Studies focus on contemporary theory and cultural practices in an interdisciplinary context of architectural, artistic, vernacular, and community-based activities. This concentration also investigates the impact of technology on our way of creating architectural models that subsequently shape and form the world. It capitalizes on the expertise of the architect-researcher to move freely between art and science, between content-based and empirical research, and to facilitate robust interdisciplinary teams of engineers, technologists, media artists, and social scientists to understand, explain, and create today's built environment. It is suited for those with a professional trajectory interested in understanding the impact of technologies on creative processes, as well as for those candidates who aim to pursue Ph.D.-level studies and research. The concentration offers a unique intertwining of intense theoretical and historical investigation with empirically based project research that culminates in a Project Report.

**section 11.1.9: Master of Architecture (M.Arch.); Post-professional (Non-Thesis) — Urban Design and Housing (45 credits)**

Urban Design and Housing at McGill is comprised of Urban Design, Affordables Homes, and Minimum Cost Housing. Urban Design emphasizes the acquisition of skills pertaining to the analysis and design of the built environment, whether in existing urban districts or in newly built areas. Our Urban Design component has a strong commitment to reflexive practice, to conducting research that can inform and improve design quality, to involving those who are affected by city design decisions, and to promoting a long-range perspective on the consequences of actions that shape the urban environment. The Housing component is comprised, historically, of two streams: Affordable Homes and Minimum Cost Housing. Affordable Homes focuses on the knowledge and design skills necessary to understand the relationship between the architect and the external forces that influence the production of affordable housing in North America. Minimum Cost Housing addresses problems and devises philosophies of shelter in developing countries. The general aim is to provide professionals with the knowledge and imagination that they will need to engage individuals and the community in meaningful debates on the nature of housing and urban space and generate creative and sustainable solutions for cities. This option is particularly attractive to students who wish to pursue careers in public agencies and private consulting firms where a credential in Urban Design is important.

**Ph.D. in Architecture****section 11.1.10: Doctor of Philosophy (Ph.D.); Architecture**

Our Ph.D. is a research-based degree, with a primary requirement of an original thesis that makes a substantial contribution to knowledge in the field of architecture. The minimum residence requirement is three years. Every year only a few students are accepted into the Ph.D. program, which means that all incoming Ph.D. candidates compete for a place as Ph.D. 2 students. The most qualified students enter into their first research seminar in September.

Doctoral candidates must have their thesis proposal (ARCH 700) approved by their adviser before embarking on their research. A Thesis Advisory Committee is then struck and is responsible for monitoring the student's research. For course ARCH 701, a comprehensive research proposal is required, as well as a demonstration of broad knowledge in the field. Candidates will submit two further reports in formal meetings with the Advisory Committee, who will review the work in progress (ARCH 702 and ARCH 703). The final meeting takes place after the Committee has reviewed the full draft of the dissertation. If approved, the dissertation will then be submitted in its final form to the Thesis Office. Acceptance of the thesis by the examiners is followed by an oral defence.

**11.1.3 Architecture Admission Requirements and Application Procedures**

**Revision, October 2012. Start of revision.**

**11.1.3.1 Admission Requirements****M.Arch. (Professional) Program (Non-Thesis)**

Applicants holding the McGill B.Sc.(Arch.) degree, or equivalent, with a cumulative grade point average of at least 3.0 on a scale of 4.0, are eligible to apply for admission.

**M.Arch. (Post-professional) (Non-Thesis)**

Applicants holding an accredited professional degree in architecture, or equivalent, with a cumulative grade point average of at least 3.0 on a scale of 4.0, are eligible to apply for admission. In special cases, candidates with a degree in a related field may be considered.

**Ph.D.**

Candidates with high Standing in McGill's M.Arch. (Post-professional), or who hold an equivalent degree from another university, are eligible to apply to this program. Those who do not have an appropriate background in the chosen research area may be recommended for the M.Arch. (Post-professional) program. Candidates who have an adequate background at the post-professional master's level in the proposed area of research will be admitted to Ph.D. 2 with the stipulation of additional courses from the M.Arch. (Post-professional) curriculum, if necessary.

A working knowledge of a language or languages relevant to the area of research is required.

**11.1.3.2 Application Procedures**

McGill's online application form for graduate program candidates is available at [www.mcgill.ca/gradapplicants/apply](http://www.mcgill.ca/gradapplicants/apply).

See *section 6.3: Application Procedures (for All Admissions Starting Summer 2013)* for detailed application procedures.

### 11.1.3.2.1 Additional Requirements

The items and clarifications below are additional requirements set by this department:

#### Professional Master of Architecture:

- Summary of work experience (please use the following): [Work Experience Form](#) [.pdf]\*



**Note:** Your employer's signature is required along with the company business card. We do NOT require the Director's signature.

- Curriculum Vitae
- Research Proposal: two-pages (maximum) indicating the general area of interest (e.g., History/Theory/Culture; Digital Technologies; Urban Design and Housing; Environmental Practices), your understanding of this area of study, faculty expertise, and research intention in terms of topic and project-based investigation. Specific references to expertise within the School are encouraged.
- An indication of preference for either the Design Studio Concentration (three-term, 45-credit) or the Design Studio Directed Research Concentration (four-term, 60-credit)

Additional Requirements for McGill B.Sc.(Arch.) Graduates:

- A comprehensive portfolio (8½" x 11" format, due no later than **February 1**) that includes the following:
  - selected work from all previous design studios (please complete using one of the following): [Studio Project Description Form](#) [.pdf]\* or [Studio Project Description Form](#) [.doc]\*;
  - examples of project work from other courses;
  - examples of freehand drawing and sketching (from the Freehand Drawing courses, Sketching School, Summer courses, and independent travel and study);
  - examples of professional work: sketches, drawings, images of models, photographs of built work (professional work includes work carried out while employed in architects' offices, as well as personal projects; please identify the architect(s) and your own roles in each project illustrated).

Additional Requirements for Graduates of Programs Other than McGill B.Sc.(Arch.):

- Reference Letters – please use one of the following: [Confidential Report on Applicant Form](#) [.pdf]\* or [Renseignements confidentiels sur le candidat](#) [.pdf]\*.
- Completed Program Comparison Chart\*
- A comprehensive portfolio (8½" x 11" format, due no later than **January 15**) that includes the following:
  - selected work from all previous design studios (please complete using one of the following): [Studio Project Description Form](#) [.pdf]\* or [Studio Project Description Form](#) [.doc]\*;
  - examples of project work from other courses;
  - examples of freehand drawing and sketching;
  - examples of professional work: sketches, drawings, images of models, photographs of built work (professional work includes work carried out while employed in architects' offices, as well as personal projects; please identify the architect(s) and your own roles in each project illustrated).

\* These documents are available in PDF or DOC format on the School of Architecture website.

#### Post-professional programs:

##### M.Arch. (Post-professional) and Ph.D.

- Reference Letters – please use our report forms: [Confidential Report on Applicant Form](#) [.pdf]\* or [Renseignements confidentiels sur le candidat](#) [.pdf]\*.
- Research Proposal – master's applicants: a one-page statement of objectives indicating the option chosen and the reasons for that choice. Applicants should include a clear description of their research topic, as well as a detailed explanation of why they wish to study at McGill University's School of Architecture.

Ph.D. applicants: a four-page description of their research topic, as well as a detailed explanation of why they wish to study at McGill University's School of Architecture.

- A portfolio (8½" x 11" format) containing at least five examples of the applicant's work. Doctoral applicants may submit evidence of research interests when a portfolio is not available.
- Written Work

\* This document is available in PDF format on the School of Architecture website.

### 11.1.3.3 Dates for Guaranteed Consideration

| Canadian      | International | Special/Exchange/Visiting                     |
|---------------|---------------|---|
| Fall: Jan. 15 | Fall: Jan. 15 | Fall: May 1 (M.Arch. (Professional) only)     |
| Winter: N/A   | Winter: N/A   | Winter: Oct. 15 (M.Arch. (Professional) only) |

| Canadian    | International | Special/Exchange/Visiting |
|-------------|---------------|---------------------------|
| Summer: N/A | Summer: N/A   | Summer: N/A               |



**Note:** We do not consider any applications to be admitted for the Summer term.

**Revision, October 2012. End of revision.**

#### 11.1.4 Architecture Faculty

##### Director

Annamarie Adams

##### Graduate Program Directors

Martin Bressani (*post-professional program*)

David Covo (*professional program*)

##### Emeritus Professors

Derek Drummond; B.Arch.(McG.), F.R.A.I.C., O.A.Q., O.A.A. (*William C. Macdonald Emeritus Professor of Architecture*)

Adrian Sheppard; B.Arch.(McG.), M.Arch.(Yale), A.A.P.P.Q., F.R.A.I.C., O.A.Q.

Radoslav Zuk; B.Arch.(McG.), M.Arch.(MIT), D.Sc.(U.A.A.), F.R.A.I.C., O.A.Q., O.A.A.

##### Professors

Annamarie Adams; B.A.(McG.), M.Arch., Ph.D.(Calif., Berk.), M.R.A.I.C. (*William C. Macdonald Professor of Architecture*)

Vikram Bhatt; N.Dip. Arch.(Ahmed.), M.Arch.(McG.), M.R.A.I.C.

Avi Friedman; B.Arch.(Technion), M.Arch.(McG.), Ph.D.(Montr.), O.A.Q., I.A.A.

Alberto Pérez-Gómez; Dipl.Eng.Arch.(Nat. Pol. Inst. Mexico), M.A., Ph.D.(Essex), M.R.A.I.C. (*Saidye Rosner Bronfman Professor of Architectural History*)

##### Associate Professors

Martin Bressani; B.Sc., B.Arch.(McG.), M.Sc.(Arch.)(MIT), D.E.A., Docteur(Paris-Sorbonne – Paris IV), O.A.Q.

Ricardo L. Castro; B.Arch.(Los Andes, Col.), M.Arch., M.A.(Ore.), F.R.A.I.C.

David Covo; B.Sc.(Arch.), B.Arch.(McG.), F.R.A.I.C., O.A.Q.

Michael Jemtrud; B.A., B.Sc., B.Arch.(Penn. St.), M.Arch.(McG.), M.R.A.I.C.

Robert Mellin; B.Arch., M.Sc.(Arch.)(Penn.), M.Arch.(McG.), M.Sc., Ph.D.(Penn.), F.R.A.I.C., N.A.A.

##### Assistant Professors

Nik Luka; B.A.A.(Ryerson), M.Arch.(Laval), Ph.D.(Tor.), M.C.I.P.

Aaron Sprecher; B.Arch.(Bezalel), M.Arch.(Calif.-LA)

Ipek Türeli; B.Arch.(Istanbul), A.A.Dipl.(A.A.), Ph.D.(Calif., Berk.)

##### Adjunct Professors

Tom Balaban, Sinsiisha Brdar, Howard Davies, Talia Dorsey, Julia Gersovitz, Phyllis Lambert, Suresh Perera, Mark Poddubiuk, Conor Sampson, Jozef Zorko

##### Course Lecturers

Torben Berns, Christina Contandriopoulos, Nancy Dunton, Ron Jelaco, Sevag Pogharian, Enrique Ramos, Pierina Saia, Pieter Sijpkes

**11.1.5 Master of Architecture (M.Arch.); Professional (Non-Thesis) — Design Studio (45 credits)**

This concentration requires a minimum of three terms (45 credits) for completion according to an intensive design studio-based curriculum. This option is a three-term consecutive degree (Fall, Winter, Summer) that requires full-time residence for one academic year.

**Required Courses (30 credits)**

|          |     |                                |
|----------|-----|--------------------------------|
| ARCH 550 | (3) | Urban Planning and Development |
| ARCH 672 | (6) | Architectural Design 1         |
| ARCH 673 | (6) | Architectural Design 2         |
| ARCH 674 | (3) | Professional Practice 1        |
| ARCH 677 | (6) | Architectural Design 3         |
| ARCH 678 | (3) | Advanced Construction          |
| ARCH 680 | (3) | Field Sketching                |

**Complementary Courses**

9-15 credits selected as follows:

Group A:

6 credits of advanced-level seminars must be chosen from Group A.

|          |     |  |
|----------|-----|--|
| ARCH 525 | (3) | Seminar on Analysis and Theory                   |
| ARCH 531 | (3) | Architectural Intentions Vitruvius - Renaissance |
| ARCH 532 | (3) | Origins of Modern Architecture                   |
| ARCH 626 | (4) | Critical Design Strategies                       |
| ARCH 684 | (4) | Contemporary Theory 1                            |
| ARCH 685 | (4) | Contemporary Theory 2                            |

Group B:

3 credits chosen from Group B.

|          |     |   |
|----------|-----|---|
| ARCH 512 | (3) | Architectural Modelling                 |
| ARCH 514 | (4) | Community Design Workshop               |
| ARCH 515 | (3) | Sustainable Design                      |
| ARCH 520 | (3) | Montreal: Urban Morphology              |
| ARCH 521 | (3) | Structure of Cities                     |
| ARCH 523 | (3) | Significant Texts and Buildings         |
| ARCH 526 | (3) | Philosophy of Structure                 |
| ARCH 527 | (3) | Civic Design                            |
| ARCH 528 | (3) | History of Housing                      |
| ARCH 529 | (3) | Housing Theory                          |
| ARCH 533 | (3) | New Approaches to Architectural History |
| ARCH 534 | (3) | Architectural Archives                  |
| ARCH 540 | (3) | Selected Topics in Architecture 1       |
| ARCH 541 | (3) | Selected Topics in Architecture 2       |
| ARCH 554 | (2) | Mechanical Services                     |
| ARCH 622 | (3) | Critical Writing                        |

|          |     |                            |
|----------|-----|----------------------------|
| ARCH 626 | (4) | Critical Design Strategies |
| ARCH 679 | (3) | Writing in Architecture    |
| ARCH 684 | (4) | Contemporary Theory 1      |
| ARCH 685 | (4) | Contemporary Theory 2      |

Note: Courses taken are to be used to fulfil one group only.

### Elective Courses

0-6 credits

A maximum of 6 credits may be completed outside the School of Architecture (500- or 600-level electives).

## 11.1.6 Master of Architecture (M.Arch.); Professional (Non-Thesis) — Design Studio-Directed Research (60 credits)

The Directed Research concentration is a four-term, 60-credit option, which is a modified version of the regular three-term 45-credit program. This is a self-directed project-based investigation that allows for a transition to a Ph.D. program through an intensive research component.

Candidates within this concentration option are assigned a faculty adviser and engage in project-based directed research. Complementary and elective courses are approved in consultation with the adviser.

### Required Courses (40 credits)

|          |     |                                |
|----------|-----|--------------------------------|
| ARCH 550 | (3) | Urban Planning and Development |
| ARCH 626 | (4) | Critical Design Strategies     |
| ARCH 672 | (6) | Architectural Design 1         |
| ARCH 673 | (6) | Architectural Design 2         |
| ARCH 674 | (3) | Professional Practice 1        |
| ARCH 678 | (3) | Advanced Construction          |
| ARCH 682 | (6) | Directed Research Project 1    |
| ARCH 683 | (9) | Directed Research Project 2    |

### Complementary Courses

(12-20 credits)

Group A:

6 credits chosen from the following courses:

|          |     |  |
|----------|-----|--|
| ARCH 525 | (3) | Seminar on Analysis and Theory                   |
| ARCH 531 | (3) | Architectural Intentions Vitruvius - Renaissance |
| ARCH 532 | (3) | Origins of Modern Architecture                   |
| ARCH 561 | (3) | Affordable Housing Seminar 1                     |
| ARCH 562 | (3) | Affordable Housing Seminar 2                     |
| ARCH 602 | (4) | Urban Design Seminar 1                           |
| ARCH 604 | (4) | Urban Design Seminar 2                           |
| ARCH 684 | (4) | Contemporary Theory 1                            |
| ARCH 685 | (4) | Contemporary Theory 2                            |

Group B:

6 credits chosen from the following courses:

|          |     |                           |
|----------|-----|---------------------------|
| ARCH 512 | (3) | Architectural Modelling   |
| ARCH 514 | (4) | Community Design Workshop |

|          |     |  |
|----------|-----|--|
| ARCH 515 | (3) | Sustainable Design                               |
| ARCH 517 | (3) | Sustainable Residential Development              |
| ARCH 520 | (3) | Montreal: Urban Morphology                       |
| ARCH 521 | (3) | Structure of Cities                              |
| ARCH 523 | (3) | Significant Texts and Buildings                  |
| ARCH 525 | (3) | Seminar on Analysis and Theory                   |
| ARCH 526 | (3) | Philosophy of Structure                          |
| ARCH 527 | (3) | Civic Design                                     |
| ARCH 528 | (3) | History of Housing                               |
| ARCH 529 | (3) | Housing Theory                                   |
| ARCH 531 | (3) | Architectural Intentions Vitruvius - Renaissance |
| ARCH 532 | (3) | Origins of Modern Architecture                   |
| ARCH 533 | (3) | New Approaches to Architectural History          |
| ARCH 534 | (3) | Architectural Archives                           |
| ARCH 535 | (3) | History of Architecture in Canada                |
| ARCH 536 | (3) | Heritage Conservation                            |
| ARCH 540 | (3) | Selected Topics in Architecture 1                |
| ARCH 541 | (3) | Selected Topics in Architecture 2                |
| ARCH 554 | (2) | Mechanical Services                              |
| ARCH 561 | (3) | Affordable Housing Seminar 1                     |
| ARCH 562 | (3) | Affordable Housing Seminar 2                     |
| ARCH 564 | (3) | Design for Development                           |
| ARCH 566 | (3) | Cultural Landscapes Seminar                      |
| ARCH 602 | (4) | Urban Design Seminar 1                           |
| ARCH 604 | (4) | Urban Design Seminar 2                           |
| ARCH 622 | (3) | Critical Writing                                 |
| ARCH 627 | (4) | Research Methods for Architects                  |
| ARCH 679 | (3) | Writing in Architecture                          |
| ARCH 680 | (3) | Field Sketching                                  |
| ARCH 684 | (4) | Contemporary Theory 1                            |
| ARCH 685 | (4) | Contemporary Theory 2                            |
| ARCH 688 | (3) | Directed Research 1                              |
| ARCH 689 | (3) | Directed Research 2                              |

Note: Courses taken are to be used to fulfil one group only.

Unless otherwise indicated, the above courses are restricted to students in the professional area.

### Elective Courses

(0-8 credits)

A maximum of 8 credits may be completed outside the School of Architecture (500- or 600-level electives) with the approval of an assigned faculty adviser.

#### 11.1.7 Master of Architecture (M.Arch.); Post-professional (Non-Thesis) — Architectural History and Theory (45 credits)

The program consists of three semesters of coursework to be completed in 12 months. Intensive weekly seminars held during the first two terms focus on architectural history and theory. ARCH 623 (Project Preparation), taken during the second semester, culminates in a project. The studio themes engage urban issues critically, raising questions of program, form, and representation. A final document includes the project plus three papers.

**Research Project (15 credits)**

|          |      |                            |
|----------|------|----------------------------|
| ARCH 624 | (15) | History and Theory Project |
|----------|------|----------------------------|

**Required Courses (30 credits)**

|          |     |                                 |
|----------|-----|---------------------------------|
| ARCH 622 | (3) | Critical Writing                |
| ARCH 623 | (3) | Project Preparation             |
| ARCH 650 | (8) | Architectural History Seminar 1 |
| ARCH 651 | (8) | Architectural History Seminar 2 |
| ARCH 652 | (4) | Architectural Theory Seminar 1  |
| ARCH 653 | (4) | Architectural Theory Seminar 2  |

**11.1.8 Master of Architecture (M.Arch.); Post-professional (Non-Thesis) — Cultural Mediations and Technology (45 credits)**

Drawing on methods in philosophy, media studies, cultural landscapes, vernacular architecture studies, and material culture, students in this option study the ways in which we conceptualize and realize the built world. How are architectural practices mediated by their broader contexts?

This option capitalizes on the expertise of the architect-researcher to move freely between art and science and between content-based and empirical research, and to facilitate robust interdisciplinary teams of engineers, technologists, media artists, and social scientists to understand, explain, and create today's built environments.

**Research Report (15 credits)**

|          |      |  |
|----------|------|--|
| ARCH 629 | (15) | Cultural Mediations and Technology Research Report |
|----------|------|--|

**Required Courses (15 credits)**

|          |     |                                 |
|----------|-----|---------------------------------|
| ARCH 623 | (3) | Project Preparation             |
| ARCH 627 | (4) | Research Methods for Architects |
| ARCH 684 | (4) | Contemporary Theory 1           |
| ARCH 685 | (4) | Contemporary Theory 2           |

**Complementary Courses (15 credits)**

15 credits of courses at the 500 level or higher, approved by an adviser.

**11.1.9 Master of Architecture (M.Arch.); Post-professional (Non-Thesis) — Urban Design and Housing (45 credits)**

The program consists of three semesters of coursework, to be completed in 12 months. Intensive weekly seminars held during the first two terms focus on urban design and housing theory and research methods. ARCH 603 Urban Design Studio is taken in tandem with ARCH 623 Project Preparation during the winter term, culminating in the Urban Design and Housing Research Report (ARCH 632).

**Research Report (15 credits)**

|          |      |  |
|----------|------|--|
| ARCH 632 | (15) | Urban Design and Housing Research Report |
|----------|------|--|

**Required Courses (21 credits)**

|          |     |                                 |
|----------|-----|---------------------------------|
| ARCH 602 | (4) | Urban Design Seminar 1          |
| ARCH 603 | (6) | Urban Design Studio             |
| ARCH 604 | (4) | Urban Design Seminar 2          |
| ARCH 623 | (3) | Project Preparation             |
| ARCH 627 | (4) | Research Methods for Architects |



**Complementary Courses (9 credits)**

|          |     |  |
|----------|-----|--|
| ARCH 515 | (3) | Sustainable Design                               |
| ARCH 517 | (3) | Sustainable Residential Development              |
| ARCH 520 | (3) | Montreal: Urban Morphology                       |
| ARCH 521 | (3) | Structure of Cities                              |
| ARCH 523 | (3) | Significant Texts and Buildings                  |
| ARCH 526 | (3) | Philosophy of Structure                          |
| ARCH 527 | (3) | Civic Design                                     |
| ARCH 528 | (3) | History of Housing                               |
| ARCH 529 | (3) | Housing Theory                                   |
| ARCH 531 | (3) | Architectural Intentions Vitruvius - Renaissance |
| ARCH 532 | (3) | Origins of Modern Architecture                   |
| ARCH 533 | (3) | New Approaches to Architectural History          |
| ARCH 535 | (3) | History of Architecture in Canada                |
| ARCH 536 | (3) | Heritage Conservation                            |
| ARCH 540 | (3) | Selected Topics in Architecture 1                |
| ARCH 541 | (3) | Selected Topics in Architecture 2                |
| ARCH 550 | (3) | Urban Planning and Development                   |
| ARCH 561 | (3) | Affordable Housing Seminar 1                     |
| ARCH 562 | (3) | Affordable Housing Seminar 2                     |
| ARCH 564 | (3) | Design for Development                           |
| ARCH 566 | (3) | Cultural Landscapes Seminar                      |
| ARCH 622 | (3) | Critical Writing                                 |
| ARCH 680 | (3) | Field Sketching                                  |
| URBP 501 | (2) | Principles and Practice 1                        |
| URBP 504 | (3) | Planning for Active Transportation               |
| URBP 505 | (3) | Geographic Information Systems                   |
| URBP 506 | (3) | Environmental Policy and Planning                |
| URBP 530 | (3) | Urban Environmental Planning                     |
| URBP 536 | (1) | Transportation Seminar 1                         |
| URBP 537 | (1) | Transportation Seminar 2                         |
| URBP 538 | (1) | Transportation Seminar 3                         |
| URBP 616 | (3) | Selected Topics 1                                |
| URBP 617 | (3) | Selected Topics 2                                |
| URBP 618 | (3) | Selected Topics 3                                |
| URBP 619 | (3) | Land Use and Transportation Planning             |
| URBP 625 | (2) | Principles and Practice 2                        |
| URBP 626 | (2) | Principles and Practice 3                        |
| URBP 629 | (3) | Cities in a Globalizing World                    |

**11.1.10 Doctor of Philosophy (Ph.D.); Architecture****Thesis**

A thesis for the doctoral degree must constitute original scholarship and must be a distinct contribution to knowledge. It must show familiarity with previous work in the field and must demonstrate ability to plan and carry out research, organize results, and defend the approach and conclusions in a scholarly manner. The research presented must meet current standards of the discipline; as well, the thesis must clearly demonstrate how the research advances knowledge in the field. Finally, the thesis must be written in compliance with norms for academic and scholarly expression and for publication in the public domain.

### Required Courses

|          |     |                                |
|----------|-----|--------------------------------|
| ARCH 700 | (0) | Dissertation Proposal          |
| ARCH 701 | (0) | Comprehensive Oral Examination |
| ARCH 702 | (0) | Progress Report 1              |
| ARCH 703 | (0) | Progress Report 2              |

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## 11.2 Chemical Engineering

### 11.2.1 Location

Department of Chemical Engineering  
M.H. Wong Building  
3610 University Street  
Montreal, QC H3A 0C5  
Canada

Telephone: 514-398-4494

Fax: 514-398-6678

Email: [info.chemeng@mcgill.ca](mailto:info.chemeng@mcgill.ca)

Website: [www.mcgill.ca/chemeng](http://www.mcgill.ca/chemeng)

### 11.2.2 About Chemical Engineering

The Department offers programs leading to the Master of Engineering and the Doctor of Philosophy degrees.

The Department's offices and research laboratories are located in the M.H. Wong Building. Collectively, 17 members of the academic staff conduct research programs in almost all areas of modern chemical engineering, drawing upon theoretical, computational, and experimental methodologies. The Department's faculty have been well supported by government programs (e.g., NSERC, FQRNT, CIHR, CFI, and CRC) and industry through research partnerships and contracts. Our laboratories are equipped with state-of-the-art equipment, and we attract outstanding graduate students from all over the world. Our main current research areas are briefly described below.

**Advanced materials and polymers** – The Department has an internationally recognized research program in structural, functional, and biological materials, spanning synthesis, characterization, processing, and modelling activities, with strong links to academic, government, and industrial research centres. Areas include plasma processing (e.g., nanofluids, carbon nanotubes, advanced coatings) and polymeric or “soft” materials research (e.g., self-assembling or structured materials; complex fluids; liquid crystals; colloids and soft composites; and novel polymerization methods). Applications of the research are targeted toward the development of next-generation, high-density storage media, functional coatings, electronic devices, composite fluids and “smart” materials, to name but a few.

**Biomedical engineering and biotechnology** – The majority of professors in the Department have at least some involvement with biological engineering. This is a very broad research area that includes biotechnology and biomedical engineering. Biotechnology is an integrated approach of combining life sciences (e.g., biochemistry and cell biology) with process engineering, design, and scale-up principles. This is the use of biological systems or living organisms to do practical things and manufacture valuable products such as biohydrogen, drugs, therapeutics, polymers, and surfactants. Biomedical engineering combines the principles of engineering with medicine as well as life sciences and biology. Examples of this include drug delivery methods, biomedical devices, cardiovascular and other biomechanics, biomaterials for applications such as artificial implants, and products such as bacteriophages for alternative treatment techniques.

**Energy** – Energy usage has increased significantly since the steam engine launched the Industrial Revolution. This is due to our ever-growing human population, increased production of consumer goods, and rising use of energy-intensive devices such as automobiles, cell phones, computers, and climate comfort units. Instability in oil production and the inevitable depletion of fossil fuels is forcing scientists to find new resources and develop new technologies to keep pace with elevating energy demands. The Chemical Engineering Department at McGill University has an extensive research effort related to energy including hydrogen production from microbial conversion of waste streams and electrolysis of water; hydrogen storage and molecular modelling of hydrogen storage; hydrogen fuel cells and solid oxide fuel cells; methane recovery, storage, and transportation using gas hydrates; and oil and gas flow assurance; as well as plasma technology to produce nanomaterials for energy conversion/storage devices.

**Environmental engineering** – Environmental engineering is the application of science and engineering principles to protect the environment and remediate contaminated sites. Chemical and environmental engineers develop and design processes to provide healthy air, water, and soil. They also develop green products and sustainable processes. Using their background in process engineering, environmental chemistry, earth sciences, and biology, engineers have to meet the current and future challenges in protecting, managing, and restoring the environment. Ongoing research in the area of environmental engineering

in our department includes the study of wastewater treatment processes; biodegradation of emerging pollutants; advanced oxidation processes; transport and fate of waterborne contaminants; production of alternative fuels; environmental nanotechnology for remediation of contaminated soils and waters; green chemistry for safer products and processes; and development of biosensors for pollutant detection.

**Plasma science and engineering** – Plasma is often called the fourth state of matter, being the result of raising a gas to such an energy level that it contains conducting particles such as electrons and ions. While most of the universe is in a plasma state, plasmas on earth are relatively uncommon. Plasma science and engineering research examines the use of the plasma state to produce physical and chemical changes to matter (bulk and surfaces). Plasmas may be in non-equilibrium, a state in which the overall gas is at low temperature and only the electrons are very energetic, or in the equilibrium state, where the temperature of all constituents is essentially equal and may range from thousands to tens of thousands of Kelvins (e.g., the sun's surface is in a plasma state, at a temperature of about 6,000K). Non-equilibrium plasmas are used in such applications as the deposition of coatings and functionalization of surfaces, the treatment of cells, and the treatment of harmful gases and liquids. Thermal plasmas are used in the synthesis of advanced materials such as nanoparticles, carbon nanotubes, and coatings, as well as in the treatment of toxic and persistent wastes and metallurgical processing. Both thermal and non-thermal plasmas are currently used and studied in the McGill Plasma Laboratory, which forms one of the founding groups of the Plasma-Québec Centre.

#### *section 11.2.5: Master of Engineering (M.Eng.); Chemical Engineering (Thesis) (45 credits)*

The M.Eng. in Chemical Engineering (Thesis) is a research-oriented degree that allows the candidates to refine their skills by expanding their knowledge of chemical engineering through coursework and a research thesis under the supervision of a Faculty member (professor). The M.Eng. (Thesis) program offers advanced training in not only fundamentals but also research methods and is, therefore, the more suitable option for those whose primary interest is research. Graduates of this degree either pursue a Ph.D. or work in industry.

#### *section 11.2.6: Master of Engineering (M.Eng.); Chemical Engineering (Non-Thesis) (45 credits)*

The M.Eng. in Chemical Engineering (Non-Thesis) is a course-oriented degree, which includes a short project completed under the supervision of a Faculty member (professor). Through the program, graduate students can advance their knowledge in various chemical engineering disciplines through coursework and technical training.

#### *section 11.2.7: Master of Engineering (M.Eng.); Chemical Engineering (Non-Thesis) — Environmental Engineering (45 credits)*

The M.Eng. in Chemical Engineering (Non-Thesis) – Environmental Engineering is a specialized version of the M.Eng. in Chemical Engineering (Non-Thesis). This inter-departmental graduate program leads to a master's degree in Environmental Engineering. The objective of the program is to train environmental professionals at an advanced level. The program is designed for individuals with an undergraduate degree in engineering. This Non-Thesis degree falls within the M.Eng. and M.Sc. programs which are offered in the Departments of Bioresource, Chemical, Civil, and Mining, Metals and Materials Engineering. The Environmental Engineering program emphasizes interdisciplinary fundamental knowledge, practical perspective and awareness of environmental issues. It is a course-oriented degree, which includes prescribed courses related to environmental engineering and a short project completed under the supervision of a Faculty member (professor). Graduate students can specialize in environmental engineering through this program offered in collaboration with the McGill School of Environment.

#### *section 11.2.8: Doctor of Philosophy (Ph.D.); Chemical Engineering*

The Ph.D. is a research degree requiring few courses and an extensive thesis, conducted under the supervision of a Faculty member (professor), that makes a distinct contribution to knowledge. The Ph.D. program prepares candidates for a career in teaching, research and/or development and graduates are expected to have acquired autonomy in conducting research. McGill also offers various workshops that provide general, transitional, and professional skills development opportunities, preparing candidates for various career options following the Ph.D.

### **11.2.3 Chemical Engineering Admission Requirements and Application Procedures**

**Revision, October 2012. Start of revision.**

#### **11.2.3.1 Admission Requirements**

Admission to graduate studies requires a minimum CGPA of 3.0/4.0 (or equivalent) for the complete bachelor's program, or a minimum GPA of 3.2/4.0 (or equivalent) in the last two years of full-time studies. Applicants to graduate studies whose mother tongue is not English, and who have not completed an undergraduate or graduate degree from a recognized foreign institution where English is the language of instruction or from a recognized Canadian institution (anglophone or francophone), must achieve a minimum TOEFL score of 90 on the Internet-based test with each component score not less than 20 (577 on the paper-based test) prior to admission.

#### **M.Eng. (Thesis), M.Eng. (Non-Thesis)**

Admission requires a bachelor's degree (or equivalent) in engineering or science disciplines.

#### **Ph.D.**

Admission requires a master's degree (or equivalent) from a recognized university. Students in the Department's M.Eng. (Thesis) program may petition to transfer to the Ph.D. program after one year without submitting the master's thesis following a formal "fast-track" procedure. At their request, applicants (without a master's degree) with exceptionally high Academic Standing and outstanding research potential will be considered for direct admission to the Ph.D. program.

### 11.2.3.2 Application Procedure

McGill's online application form for graduate program candidates is available at [www.mcgill.ca/gradapplicants/apply](http://www.mcgill.ca/gradapplicants/apply).

See [section 6.3: Application Procedures \(for All Admissions Starting Summer 2013\)](#) for detailed application procedures.

#### 11.2.3.2.1 Additional Requirements

- Reference Letter – Ph.D. applicants must submit a letter of recommendation from their master's research supervisor.

### 11.2.3.3 Dates for Guaranteed Consideration

| Canadian        | International    | Special/Exchange/Visiting              |
|-----------------|------------------|--|
| Fall: Jan. 15   | Fall: Jan. 15    | Fall: Jan. 15                          |
| Winter: Oct. 15 | Winter: Sept. 15 | Winter: Same as Canadian/International |
| Summer: Jan. 15 | Summer: Jan. 15  | Summer: Jan. 15                        |

Dates for Guaranteed Consideration differ for International and Canadian (and Permanent Resident) students to allow time to obtain a visa.

**Revision, October 2012. End of revision.**

## 11.2.4 Chemical Engineering Faculty

### Chair

D. Berk

### Emeritus Professors

J.M. Dealy; B.S.(Kansas), M.S.E., Ph.D.(Mich.), Eng.

M.R. Kamal; B.S.(Ill.), M.S., Ph.D.(Carn. Mell), Eng.

J.H. Vera; B.Mat.(Chile), Ing.Quim.(U.T.E.), M.S.(Calif.), Dr.Ing.(Santa Maria), Eng.

### Professor

A.D. Rey; B.Ch.E.(CCNY), Ph.D.(Calif.) (*James McGill Professor*)

### Associate Professors

D. Berk; B.Sc.(Bosphorus), M.E.Sc.(W. Ont.), Ph.D.(Calg.), P.Eng.

S. Coulombe; B.Sc., M.Sc.A.(Sher.), Ph.D.(McG.), Jr. Eng. (*CRC-Tier II*)

R.J. Hill; B.E.(Auck.), Ph.D.(C'nell) (*CRC-Tier II*)

R.L. Leask; B.A.Sc., M.A.Sc.(Wat.), Ph.D.(Tor.), P.Eng. (*William Dawson Scholar*)

M. Maric; B.Eng.Mgt.(McM.), Ph.D.(Minn.), P.Eng.

J.-L. Meunier; D.Ing.(E.P.F.L.), M.Sc., Ph.D.(I.N.R.S.), Eng.

S. Omanovic; B.Sc., Ph.D.(Zagreb)

T.M. Quinn; B.Sc.(Qu.), S.M., Ph.D.(MIT), Jr. Eng. (*CRC-Tier I*)

P. Servio; B.A.Sc., Ph.D.(Br. Col.) (*CRC-Tier II*)

N. Tufenkji; B.Eng.(McG.), M.Sc., Ph.D.(Yale), Jr. Eng. (*CRC-Tier II*)

V. Yargeau; B.Ch.E., M.Sc.A., Ph.D.(Sher.), Eng.

### Assistant Professors

P.-L. Girard-Lauriault; B.Sc.(Montr.), Ph.D.(École Poly., Montr.)

J. Gostick; B.Eng.(Ryerson), M.A.Sc., Ph.D.(Wat.)

E. Jones; B.A.Sc.(Wat.), M.S., Ph.D.(Cal. Tech.) Jr. Eng. (*CRC-Tier II*)

**Assistant Professors**

A. Kietzig; Dipl.Ing.(TU Berlin), Ph.D.(Br. Col.)

**Paprican Adjunct Professor**

G.J. Kubes; B.Sc., M.Sc.(Prague), Ph.D.(Bratislava), P.Eng.

**Adjunct Professors**

T. Addona, P. Bisailon, M. Davidovsky, A. DeMori, D. Dionne, M. Fokas, M. Mirmehrabi, M. Perrier, N. Peters, B. Sarkis, J. Simandl, S. Tadayon

**11.2.5 Master of Engineering (M.Eng.); Chemical Engineering (Thesis) (45 credits)****Thesis Courses (31 credits)**

|          |      |                   |
|----------|------|-------------------|
| CHEE 697 | (6)  | Thesis Proposal   |
| CHEE 698 | (12) | Thesis Research 1 |
| CHEE 699 | (13) | Thesis Research 2 |

**Required Courses (2 credits)**

|          |     |                     |
|----------|-----|---------------------|
| CHEE 681 | (1) | Laboratory Safety 1 |
| CHEE 682 | (1) | Laboratory Safety 2 |

**Complementary Courses (12 credits)**

3-4 credits of Chemical Engineering courses at the 500, 600, or 700 level.

4 credits from the following:

|          |     |                                  |
|----------|-----|----------------------------------|
| CHEE 611 | (4) | Heat and Mass Transfer           |
| CHEE 621 | (4) | Thermodynamics                   |
| CHEE 631 | (4) | Foundations of Fluid Mechanics   |
| CHEE 641 | (4) | Chemical Reaction Engineering    |
| CHEE 651 | (4) | Advanced Biochemical Engineering |
| CHEE 662 | (4) | Computational Methods            |
| CHEE 672 | (4) | Process Dynamics and Control     |

4-5 credits of Chemical Engineering or other Engineering or Science courses at the 500, 600, or 700 level.

**11.2.6 Master of Engineering (M.Eng.); Chemical Engineering (Non-Thesis) (45 credits)****Research Project**

Project (design or research): 6-12 credits.

6 credits must include the following course:

|          |     |                                 |
|----------|-----|---------------------------------|
| CHEE 695 | (6) | Project in Chemical Engineering |
|----------|-----|---------------------------------|

**Complementary Courses**

33-39 credits (a minimum of 18 credits in Chemical Engineering) at the 500, 600, or 700 level.

9 credits must be in an area of concentration.

12 additional courses at the 500, 600, or 700 level.

**11.2.7 Master of Engineering (M.Eng.); Chemical Engineering (Non-Thesis) — Environmental Engineering (45 credits)**

**Research Project (6 credits)**

CHEE 695 (6) Project in Chemical Engineering

**Required Courses (6 credits)**

CHEE 591 (3) Environmental Bioremediation  
 CIVE 615 (3) Environmental Engineering Seminar

**Complementary Courses (22 credits)**

Minimum of 22 credits

**Data analysis course: (3 credits)**

AEMA 611 (3) Experimental Designs 1  
 CIVE 555 (3) Environmental Data Analysis  
 PSYC 650 (3) Advanced Statistics 1

**Toxicology: (3 credits)**

OCCH 612 (3) Principles of Toxicology  
 OCCH 616 (3) Occupational Hygiene

**Water pollution engineering: (4 credits)**

CIVE 651 (4) Theory: Water / Wastewater Treatment  
 CIVE 652 (4) Biological Treatment: Wastewaters  
 CIVE 660 (4) Chemical and Physical Treatment of Waters

**Air pollution engineering: (3 credits)**

CHEE 592 (3) Industrial Air Pollution Control  
 MECH 534 (3) Air Pollution Engineering

**Soil and water quality management: (3 credits)**

BREE 533 (3) Water Quality Management  
 CIVE 686 (4) Site Remediation

**Environmental impact: (3 credits)**

GEOG 501 (3) Modelling Environmental Systems  
 GEOG 551 (3) Environmental Decisions

or an approved 500-, 600-, or 700-level alternative.

**Environmental policy: (3 credits)**

URBP 506 (3) Environmental Policy and Planning

or an approved 500-, 600-, or 700-level alternative.

#### Elective Courses (11 credits)

CHEE 696 (6) Extended Project

or another Engineering or non-Engineering 500-, 600-, or 700-level course subject to approval.

### 11.2.8 Doctor of Philosophy (Ph.D.); Chemical Engineering

#### Thesis

A thesis for the doctoral degree must constitute original scholarship and must be a distinct contribution to knowledge. It must show familiarity with previous work in the field and must demonstrate ability to plan and carry out research, organize results, and defend the approach and conclusions in a scholarly manner. The research presented must meet current standards of the discipline; as well, the thesis must clearly demonstrate how the research advances knowledge in the field. Finally, the thesis must be written in compliance with norms for academic and scholarly expression and for publication in the public domain.

#### Required Courses

|          |     |                        |
|----------|-----|------------------------|
| CHEE 681 | (1) | Laboratory Safety 1    |
| CHEE 682 | (1) | Laboratory Safety 2    |
| CHEE 795 | (0) | Ph.D. Thesis Proposal  |
| CHEE 796 | (0) | Ph.D. Proposal Defence |
| CHEE 797 | (0) | Ph.D. Seminar          |

#### Complementary Courses

(6-12 credits)

6-8 credits of Chemical Engineering courses (two courses) at the 500, 600, or 700 level.

12 credits (three courses) from the following list must be taken during the M.Eng. and/or Ph.D. program:

|          |     |                                  |
|----------|-----|----------------------------------|
| CHEE 611 | (4) | Heat and Mass Transfer           |
| CHEE 621 | (4) | Thermodynamics                   |
| CHEE 631 | (4) | Foundations of Fluid Mechanics   |
| CHEE 641 | (4) | Chemical Reaction Engineering    |
| CHEE 651 | (4) | Advanced Biochemical Engineering |
| CHEE 662 | (4) | Computational Methods            |
| CHEE 672 | (4) | Process Dynamics and Control     |

\* Note: 8 credits from the list, if taken during the Ph.D. program, can be used to meet the first coursework requirement of 6-8 credits of Chemical Engineering courses.

## 11.3 Civil Engineering and Applied Mechanics

### 11.3.1 Location

Department of Civil Engineering and Applied Mechanics  
 Macdonald Engineering Building, Room 492  
 817 Sherbrooke Street West  
 Montreal, QC H3A 0C3  
 Canada

Telephone: 514-398-6858

Fax: 514-398-7361  
 Email: [gradinfo.civil@mcgill.ca](mailto:gradinfo.civil@mcgill.ca)  
 Website: [www.mcgill.ca/civil](http://www.mcgill.ca/civil)

### 11.3.2 About Civil Engineering and Applied Mechanics

Advanced courses of instruction and laboratory facilities are available for Engineering graduate students who wish to proceed to the degrees of **M.Eng.**, **M.Sc.**, and **Ph.D.**

Graduate studies and research are at present being conducted in the fields of structures and structural mechanics; infrastructure rehabilitation; risk engineering; fluid mechanics and hydraulics; materials engineering; soil behaviour; soil mechanics and foundations; water resources engineering; environmental engineering; and transportation engineering.

#### **M.Eng. in Civil Engineering**

The master's degree can be pursued as a research degree (thesis) or as a coursework-based degree (project). The thesis degree is for those who wish to undertake research while the project degree is for those who wish to have a broader and more specialized training in civil engineering.

##### *section 11.3.5: Master of Engineering (M.Eng.); Civil Engineering (Thesis) (45 credits)*

Students obtain a deeper understanding of their area of specialty through courses selected with their supervisor. A two- to three-semester independent research project is undertaken in the field of structures and structural materials; infrastructure rehabilitation; risk engineering; fluid mechanics and hydraulics; materials engineering; soil behaviour; soil mechanics and foundations; water resources engineering; environmental engineering; and transportation engineering.

##### *section 11.3.6: Master of Science (M.Sc.); Civil Engineering (Thesis) (45 credits)*

Candidates with a bachelor's degree in a discipline other than Engineering, such as Science or Arts, may be accepted into an M.Sc. program in the Department. Such students would typically study in the fluid mechanics, water resources, or environmental engineering areas, and would follow the thesis option program.

##### *section 11.3.7: Master of Engineering (M.Eng.); Civil Engineering (Non-Thesis) (45 credits)*

This is primarily a coursework degree with a small independent project.

##### *section 11.3.8: Master of Engineering (M.Eng.); Civil Engineering (Non-Thesis) — Environmental Engineering (45 credits)*

This program is offered to students with a university undergraduate degree in engineering who desire graduate education in the environmental engineering field. This non-thesis option is within the context of the existing M.Eng. (project option) programs currently offered in the Departments of Bioresource Engineering (Agricultural and Environmental Sciences); Chemical Engineering; Civil Engineering; and Mining, Metals, and Materials Engineering. This program emphasizes interdisciplinary fundamental knowledge courses, practical applications in diverse environmental contexts, and functional skills needed for solving environmental problems through a wide range of technical and non-technical courses offered by collaborating departments and faculties at the University. Candidates must possess a bachelor's degree in engineering. The Environmental Engineering option is administered by the Faculty of Engineering. Further information may be obtained from the Program Coordinator, Department of Civil Engineering and Applied Mechanics.

##### *section 11.3.9: Doctor of Philosophy (Ph.D.); Civil Engineering*

Research can be conducted in the fields of structures and structural mechanics; infrastructure rehabilitation; risk engineering; fluid mechanics and hydraulics; materials engineering; soil behaviour; soil mechanics and foundations; water resources engineering; environmental engineering; and transportation engineering.

### 11.3.3 Civil Engineering and Applied Mechanics Admission Requirements and Application Procedures

**Revision, October 2012. Start of revision.**

#### **11.3.3.1 Admission Requirements**

The general rules of Graduate and Postdoctoral Studies apply and are detailed in [section 6: Graduate Admissions and Application Procedures](#). The minimum academic standard for admission is a cumulative grade point average (CGPA) of 3.0/4.0 in a recognized program. Alternatively, an equivalent grade point average of no less than 3.2/4.0 over the last two years of the program will be accepted.

Applicants to graduate studies whose mother tongue is not English, and who have not completed an undergraduate or graduate degree from a recognized foreign institution where English is the language of instruction or from a recognized Canadian institution (anglophone or francophone), must write the iBT Test of English as a Foreign Language (TOEFL) and achieve an overall or total score of not less than 92, with each component score (i.e., Writing, Reading, Speaking, Listening) not less than 20. The test is administered by the Educational Testing Service and is available throughout the world. The results reach McGill approximately eight weeks after the test is taken. It is the student's responsibility to make the necessary arrangements with the examining board to write the test in the country of residence. Full information about the test and a registration form may be obtained by writing to: Test of English as a Foreign Language, Box 6191, Princeton, New Jersey 08540-6151, USA ([www.ets.org/toefl](http://www.ets.org/toefl)).



**11.3.3.2 Application Procedures**

McGill's online application form for graduate program candidates is available at [www.mcgill.ca/gradapplicants/apply](http://www.mcgill.ca/gradapplicants/apply).

See [section 6.3: Application Procedures \(for All Admissions Starting Summer 2013\)](#) for detailed application procedures.

**11.3.3.3 Dates for Guaranteed Consideration**

| Canadian        | International    | Special/Exchange/Visiting |
|-----------------|------------------|---------------------------|
| Fall: Jan. 15   | Fall: Jan. 15    | Fall: March 15            |
| Winter: Oct. 15 | Winter: Sept. 15 | Winter: Oct. 15           |
| Summer: Jan. 15 | Summer: Jan. 15  | Summer: March 15          |

Revision, October 2012. End of revision.

**11.3.4 Civil Engineering and Applied Mechanics Faculty****Chair**

V.T.V. Nguyen

**Chair of Graduate Program**

G. McClure

**Emeritus Professors**

P.J. Harris; B.Sc.(Manit.), M.Eng., Ph.D.(McG.), F.E.I.C., F.C.S.C.E., Eng.

M.S. Mirza; M.S., B.Eng.(Karachi), M.Eng., Ph.D.(McG.), F.E.I.C., F.C.S.C.E., F.A.C.I., Hon.F.I.E.P., Eng.

S.B. Savage; B.Eng.(McG.), M.S.Eng.(Cal. Tech.), Ph.D.(McG.), F.R.S.C.

**Professors**

V.H. Chu; B.S.Eng.(Taiwan), M.A.Sc.(Tor.), Ph.D.(MIT), Eng.

D. Mitchell; B.A.Sc., M.A.Sc., Ph.D.(Tor.), F.A.C.I., Eng.

V.T.V. Nguyen; B.M.E.(Vietnam), M.C.E.(A.I.T.), D.A.Sc.(Montr.), Eng.

J. Nicell; B.A.Sc., M.A.Sc., Ph.D.(Windsor), P.Eng.

A.P.S. Selvadurai; M.S.(Stan.), Ph.D., D.Sc.(Nott.), F.E.I.C., F.I.M.A., F.C.S.C.E., P.Eng.

S.C. Shrivastava; B.Sc.(Eng.)(Vikram), M.C.E.(Del.), Sc.D.(Col.)

**Associate Professors**

L. Chouinard; B.Eng., M.Eng.(Montr.), B.C.L.(McG.), Sc.D.(MIT), Eng.

S.J. Gaskin; B.Sc.(Eng.)(Qu.), Ph.D.(Cant.), Eng.

R. Gehr; B.Sc.(Eng.)(Witw.), M.A.Sc., Ph.D.(Tor.), P.Eng.

S. Ghoshal; B.C.E.(India), M.S.(Missouri), Ph.D.(Carn. Mell), P.Eng.

G. McClure; B.Eng.(Montr.), S.M.C.E.(MIT), Ph.D.(Montr.), Eng.

M.A. Meguid; B.Sc.(Cairo), M.Sc., Ph.D.(W. Ont.), P.Eng.

C. Rogers; B.A.Sc., M.A.Sc.(Wat.), Ph.D.(Syd.), P.Eng.

Y. Shao; B.Sc., M.S.(Tongji), Ph.D.(N'western), P.Eng.

**Assistant Professors**

A.J. Boyd; B.Sc.Eng.(New Br.), M.A.Sc.(Tor.), Ph.D.(Br. Col.), P.Eng., F.A.C.I.

N. Eluru; B.Sc.(Indian IT), M.Sc. Ph.D.(Texas-Austin)

**Assistant Professors**

D. Frigon; B.Sc., M.Sc.(McG.), Ph.D.(Ill.-Urbana-Champaign)  
 T. Gleeson; B.Sc.(Vic., BC), M.Sc.(S. Fraser), Ph.D.(Qu.)  
 M. Hatzopoulou; B.Sc., M.Sc.(Beirut), Ph.D.(Tor.)  
 D. Lignos; B.Sc.(Nat. Tech., Athens), M.Sc., Ph.D.(Stan.)  
 J. Liu; BE/ME(China), ME(Rensselaer Poly.), Ph.D.(Purd.)  
 L. Miranda-Moreno; B.Sc., M.Eng.(Mexico), Ph.D.(Wat.)

**Adjunct Professors**

S. Babarutsi, R. Edwards, J. Hadjinicolaou, J. Hawari, A. Keane, Z. Lounis, P. Lundahl, C. Manatakos, T.S. Nguyen, P. Rodrigue, S. Scola, W. Taylor, M. Villeneuve, J. Vrana

**11.3.5 Master of Engineering (M.Eng.); Civil Engineering (Thesis) (45 credits)**

**Thesis Courses (27 credits)**

|          |     |                   |
|----------|-----|-------------------|
| CIVE 630 | (3) | Thesis Research 1 |
| CIVE 631 | (3) | Thesis Research 2 |
| CIVE 632 | (3) | Thesis Research 3 |
| CIVE 633 | (6) | Thesis Research 4 |
| CIVE 634 | (6) | Thesis Research 5 |
| CIVE 635 | (6) | Thesis Research 6 |

**Required Course**

1 credit:

|          |     |                          |
|----------|-----|--------------------------|
| CIVE 662 | (1) | Masters Research Seminar |
|----------|-----|--------------------------|

**Complementary Courses (17 credits)**

(minimum 17 credits)

A minimum of five courses at the 500 or 600 level, with at least 8 credits at the 600 level.

**11.3.6 Master of Science (M.Sc.); Civil Engineering (Thesis) (45 credits)**

**Thesis Courses (27 credits)**

|          |     |                   |
|----------|-----|-------------------|
| CIVE 630 | (3) | Thesis Research 1 |
| CIVE 631 | (3) | Thesis Research 2 |
| CIVE 632 | (3) | Thesis Research 3 |
| CIVE 633 | (6) | Thesis Research 4 |
| CIVE 634 | (6) | Thesis Research 5 |
| CIVE 635 | (6) | Thesis Research 6 |

**Required Course**

1 credit:

|          |     |                          |
|----------|-----|--------------------------|
| CIVE 662 | (1) | Masters Research Seminar |
|----------|-----|--------------------------|

**Complementary Courses (17 credits)**

A minimum of five courses at the 500 or 600 level, with at least 8 credits at the 600 level.

**11.3.7 Master of Engineering (M.Eng.); Civil Engineering (Non-Thesis) (45 credits)****Research Project**

(5-15 credits)

Credit for the project may vary between 5 and 15 credits, depending on the amount of work involved. Project courses are chosen from the following:

|          |     |                    |
|----------|-----|--------------------|
| CIVE 691 | (1) | Research Project 1 |
| CIVE 692 | (2) | Research Project 2 |
| CIVE 693 | (3) | Research Project 3 |
| CIVE 694 | (4) | Research Project 4 |
| CIVE 695 | (5) | Research Project 5 |
| CIVE 696 | (6) | Research Project 6 |
| CIVE 697 | (7) | Research Project 7 |

**Complementary Courses**

(30-40 credits)

A minimum of 30 credits at the 500 or 600 level, with at least 8 credits at the 600 level.

**11.3.8 Master of Engineering (M.Eng.); Civil Engineering (Non-Thesis) — Environmental Engineering (45 credits)**

The program consists of a minimum of 45 credits, of which, depending on the student's home department, a minimum of 5 and a maximum of 15 may be allotted to the research project. The balance of 30 to 40 credits is earned by coursework. The Department also allows students to complete the program using a minimum of 45 credits of coursework only.

The Environmental Engineering option is administered by the Faculty of Engineering. Further information may be obtained from the Program Coordinator, Department of Civil Engineering and Applied Mechanics.

**Research Project**

(0 or 5-15 credits)

The program may include a project or, with Departmental approval, may be completed with courses only.

**Required Courses (6 credits)**

|          |     |                                   |
|----------|-----|-----------------------------------|
| CHEE 591 | (3) | Environmental Bioremediation      |
| CIVE 615 | (3) | Environmental Engineering Seminar |

**Complementary Courses**

(24-39 credits)

a minimum of 22 credits chosen from the following:

**Data analysis:**

|          |     |                             |
|----------|-----|-----------------------------|
| AEMA 611 | (3) | Experimental Designs 1      |
| CIVE 555 | (3) | Environmental Data Analysis |
| PSYC 650 | (3) | Advanced Statistics 1       |

**Toxicology:**

|          |     |  |
|----------|-----|--|
| OCCH 505 | (0) |  |
|----------|-----|--|

OCCH 612 (3) Principles of Toxicology

**Water pollution engineering:**

CIVE 651 (4) Theory: Water / Wastewater Treatment

CIVE 652 (4) Biological Treatment: Wastewaters

CIVE 660 (4) Chemical and Physical Treatment of Waters

**Air pollution engineering:**

MECH 534 (3) Air Pollution Engineering

**Soil and water quality management:**

BREE 533 (3) Water Quality Management

CIVE 686 (4) Site Remediation

**Environmental impact:**

GEOG 501 (3) Modelling Environmental Systems

GEOG 551 (3) Environmental Decisions

**Environmental policy**

URBP 506 (3) Environmental Policy and Planning

**Elective Courses**

Also, 0-15 credits of graduate courses from an approved list of courses from the Faculties of Engineering, Agricultural and Environmental Sciences, Law, Management; Departments of Atmospheric and Oceanic Sciences, Biology, Chemistry, Earth and Planetary Sciences, Economics, Epidemiology and Biostatistics, Geography, Occupational Health, Political Science, Religious Studies, Sociology, and McGill School of Environment.

**11.3.9 Doctor of Philosophy (Ph.D.); Civil Engineering**

**Thesis**

A thesis for the doctoral degree must constitute original scholarship and must be a distinct contribution to knowledge. It must show familiarity with previous work in the field and must demonstrate ability to plan and carry out research, organize results, and defend the approach and conclusions in a scholarly manner. The research presented must meet current standards of the discipline; as well, the thesis must clearly demonstrate how the research advances knowledge in the field. Finally, the thesis must be written in compliance with norms for academic and scholarly expression and for publication in the public domain.

CIVE 701 (0) Ph.D. Comprehensive Preliminary Oral Exam

**Complementary Courses**

6-8 credits at the 500 or 600 level taken from the Department of Civil Engineering.

**11.4 Electrical and Computer Engineering**

**11.4.1 Location**

Department of Electrical and Computer Engineering  
 McConnell Engineering Building, Room 602  
 3480 University Street

Montreal, QC H3A 0E9  
Canada

Telephone: 514-398-7344  
Fax: 514-398-4470  
Email: [grad.ece@mcgill.ca](mailto:grad.ece@mcgill.ca)  
Website: [www.mcgill.ca/ece](http://www.mcgill.ca/ece)

#### 11.4.2 About Electrical and Computer Engineering

The Department offers programs of graduate studies leading to a degree of Master of Engineering (thesis or project/non-thesis) or Doctor of Philosophy.

The research interests and facilities of the Department are very extensive, involving more than 50 faculty members and 300 postgraduate students. The major activities are divided into the following groups: Bio-Electrical Engineering; Telecommunications and Signal Processing; Systems and Control; Integrated Circuits and Systems; Nano-Electronic Devices and Materials; Photonics Systems; Computational Electromagnetics; Power Engineering; and Intelligent Systems. The Department is equipped with state-of-the-art experimental laboratories and there are numerous multidisciplinary research projects, so students are provided with an ideal environment to develop new technologies, discover novel phenomena, and design revolutionary devices.

##### Research Facilities

The Department has extensive laboratory facilities for all its main research areas. In addition, McGill University often collaborates with other institutions for teaching and research.

- The laboratories for research in Robotics, Control, and Vision are in the Centre for Intelligent Machines (CIM).
- Telecommunications laboratories focus their work on signal processing, broadband communications, and networking; these laboratories form part of the Centre for Advanced Systems and Communications (SYTACom), a McGill University Research Centre devoted to fostering innovation in the area of communications systems and technologies via advanced research and training of highly qualified personnel.
- The Integrated Circuits and Systems Laboratory (ICaS) supports research in FPGAs, MEMS, micro- and nano-systems, VLSI architectures for digital communications and signal processing, mixed signal, RF, and microwave integrated circuits and components, simulation of integrated circuits and microsystems, integrated antennas, design for testability, reconfigurable computing, high-speed circuits, and packaging.
- Antenna and microwave research, and optical fibre and integrated optics research are carried out in a fully equipped facility.
- The Photonics Systems laboratory includes continuous wave and femtosecond Ti: Sapphire lasers, diode lasers, extensive optics and optomechanics, and sophisticated electronic and imaging equipment.
- Solid state facilities include measurement equipment for magnetic and electric properties of materials, vacuum deposition, and RF sputtering systems.
- The Computational Electromagnetics Laboratory provides tools for numerical analysis, visualization, interface design, and knowledge-based system development.
- There is also a well-equipped laboratory for power electronics and power systems research.

The Department has extensive computer facilities. Most research machines are networked, providing access to a vast array of hardware. In addition, McGill University is linked to the *Centre de recherche informatique de Montréal* (CRIM) and the University Computing Centre.

There are three other universities in Montreal: Concordia University is the other English-language university; *l'Université de Montréal*, and its affiliated school of engineering, *l'École Polytechnique*, is the largest francophone university; *l'Université du Québec* has a campus in Montreal and in major towns throughout the province.

The proximity of these schools to McGill University ensures that a rich array of courses is available to suit individual needs. McGill also collaborates on research projects with many organizations such as *l'Institut de recherche d'Hydro-Québec* (IREQ) and *l'Institut national de la recherche scientifique* (INRS).

##### Financial Support

**Graduate Assistantships:** The Department awards several graduate assistantships to qualified full-time graduate students. These are normally funded from research grants or contracts awarded to individual faculty members. In return, the graduate assistant is expected to perform research-related tasks assigned by the professor from whose grant the assistantship is paid. A good part, but not necessarily all, of this work can be used for preparing a thesis. There is no special application form for graduate assistantships; all applicants who indicate a need for support on their application forms will be considered.

**Teaching Assistantships:** Graduate students, with the approval of their supervisors, may also undertake teaching assistantships for additional remuneration. These are awarded at the beginning of the term. The Department can make no prior commitments.

Graduate students can also receive financial aid through fellowships, loans, or bursaries. For more information, please refer to [www.mcgill.ca/gps/funding/students-posdocs](http://www.mcgill.ca/gps/funding/students-posdocs), or contact Graduate and Postdoctoral Studies, McGill University, James Administration Building, Room 400, 845 Sherbrooke Street West, Montreal, QC, H3A 0G4.

##### *section 11.4.5: Master of Engineering (M.Eng.); Electrical Engineering (Thesis) (46 crédits)*

The Master of Engineering degree (thesis option) involves six graduate courses and an externally examined thesis. This program is research oriented and the thesis is expected to involve a thorough examination of a topic of current interest in the research area within the Department. Undertaking this program at McGill University provides students with an opportunity to conduct intensive research under the supervision of researchers who are leaders in their field. The program is an ideal preparation for a Ph.D. degree or an industrial research career.

**section 11.4.6: Master of Engineering (M.Eng.); Electrical Engineering (Thesis) — Computational Science and Engineering (47 credits)**

This program is under review for 2012–2013 and may not be offered. Please inquire.

**section 11.4.7: Master of Engineering (M.Eng.); Electrical Engineering (Non-Thesis) (47 credits)**

The Master of Engineering degree (project option) involves nine graduate courses and an internally examined research project. The program is oriented more toward professional development than the thesis option. The project is of significantly less scope than a thesis, and includes options such as a technical review, a design project, or a small-scale research project. Undertaking nine courses provides students with a very solid background in electrical and computer engineering, both in terms of breadth across the entire field and depth in the area of specialty. Graduates frequently pursue careers in research and development. A part-time program is possible.

**section 11.4.8: Doctor of Philosophy (Ph.D.); Electrical Engineering**

The Ph.D. degree recognizes a significant novel research contribution that is described in an externally examined thesis. Students who are admitted to this program normally have a master's degree. Research is conducted under the supervision of a faculty member. The Department provides an excellent environment for conducting research, with supervision by internationally renowned researchers and access to state-of-the-art experimental facilities. Graduates from the program most commonly pursue research and teaching careers in academia or research careers in industrial labs.

**11.4.3 Electrical and Computer Engineering Admission Requirements and Application Procedures**

Revision, October 2012. Start of revision.

**11.4.3.1 Admission Requirements**

**English Proficiency Requirement:** Applicants to graduate studies whose mother tongue is not English, and who have not completed an undergraduate or graduate degree from a recognized foreign institution where English is the language of instruction or from a recognized Canadian institution (anglophone or francophone), must submit documented proof of competency in English. Accepted English language tests and minimum test score requirements can be found on our website: [www.mcgill.ca/ece/grad/admissions](http://www.mcgill.ca/ece/grad/admissions). Official results must be received before the Dates for Guaranteed Consideration.

**GRE Requirement:** A GRE score on the General Aptitude Test is required by all students who have not completed their undergraduate or graduate degree in Canada. A minimum total score of 1100 for the verbal and quantitative sections and a minimum score of 3.5/6.0 on the analytical writing assessment section is required. Official results must be received before the Dates for Guaranteed Consideration.

**M.Eng. Degree (Admission Requirements)**

The applicant must be the graduate of a recognized university and hold a bachelor's degree or its equivalent, as determined by McGill, in Electrical or Computer Engineering or a closely allied field. An applicant holding a degree in another field of engineering or science will be considered but a Qualifying year may be given to make up any deficiencies. The applicant must have a high academic achievement: a Standing equivalent to a **cumulative grade point average (CGPA) of 3.0 out of 4, or a GPA of 3.2 out of 4.0 for the last two full-time academic years**. Satisfaction of these general requirements does not guarantee admission. Admission to graduate studies is limited and acceptance is on a very competitive basis.

**Ph.D. Degree (Admission Requirements)**

In addition to satisfying the requirements for the M.Eng. program, candidates must hold a suitable master's degree from a recognized university. The applicant must have a high academic achievement: a Standing equivalent to a cumulative grade point average (CGPA) of 3.0 out of 4.0. Satisfaction of these general requirements does not guarantee admission. Admission to graduate studies is limited and acceptance is on a very competitive basis.

**11.4.3.2 Application Procedures**

McGill's online application form for graduate program candidates is available at [www.mcgill.ca/gradapplicants/apply](http://www.mcgill.ca/gradapplicants/apply).

See *section 6.3: Application Procedures (for All Admissions Starting Summer 2013)* for detailed application procedures.

The Department accepts most of its graduate students for September; the chance of acceptance for January is significantly lower.

**11.4.3.2.1 Additional Requirements**

The items and clarifications below are additional requirements set by this department:

- Research Proposal
- Applicant Profile Form
- GRE: the General Aptitude Test is required by all students who have not completed their undergraduate or graduate degree in Canada.

**11.4.3.3 Dates for Guaranteed Consideration**

| Canadian        | International    | Special/Exchange/Visiting              |
|-----------------|------------------|--|
| Fall: Jan. 15   | Fall: Jan. 15    | Fall: Jan. 15                          |
| Winter: Oct. 15 | Winter: Sept. 15 | Winter: Same as Canadian/International |

| Canadian    | International   | Special/Exchange/Visiting |
|-------------|-----------------|---------------------------|
| Summer: N/A | Summer: Jan. 15 | Summer: N/A               |

All documents must be received by the Department's Admissions Committee by the Dates for Guaranteed Consideration.

**Revision, October 2012. End of revision.**

#### 11.4.4 Electrical and Computer Engineering Faculty

##### Chair (*Interim*)

Fabrice Labeau

##### Graduate Program Director

Richard Rose

##### Emeritus Professors

Eric L. Adler; B.Sc.(Lond.), M.A.Sc.(Tor.), Ph.D.(McG.), F.I.E.E.E., Eng.

Pierre R. Bélanger; B.Eng.(McG.), S.M., Ph.D.(MIT), F.I.E.E.E., Eng.

Maier L. Blostein; B.Eng., M.Eng.(McG.), Ph.D.(Ill.), F.I.E.E.E., Eng.

Clifford H. Champness; M.Sc.(Lond.), Ph.D.(McG.)

Gerry W. Farnell; B.A.Sc.(Tor.), S.M.(MIT), Ph.D.(McG.), F.I.E.E.E., Eng.

Francisco D. Galiana; B.Eng.(McG.), S.M., Ph.D.(MIT), F.I.E.E.E., Eng.

Peter Kabal; B.A.Sc., M.A.Sc., Ph.D.(Tor.)

Lorne Mason; M.Eng., Ph.D.(Sask.)

Boon-Teck Ooi; B.E.(Adel.), S.M.(MIT), Ph.D.(McG.), Eng.

Tomas J.F. Pavlasek; B.Eng., M.Eng., Ph.D.(McG.), Eng.

Nicholas C. Rumin; B.Eng., M.Sc., Ph.D.(McG.), Eng.

##### Professors

Peter E. Caines; B.A.(Oxf.), D.I.C., Ph.D.(Lond.), F.R.S.C., F.I.E.E.E., F.C.I.A.R. (*James McGill Professor and Macdonald Professor*)

Benoit Champagne; B.Eng., M.Eng.(Montr.), Ph.D.(Tor.)

Lawrence Chen; B.Eng.(McG.), M.A.Sc., Ph.D.(Tor.)

James Clark; B.Sc., Ph.D.(Br. Col.) (*Associate Dean, Academic*)

Frank Ferrie; B.Eng., Ph.D.(McG.)

Geza Joos; B.Sc.(C'odia), M.Eng., Ph.D.(McG.) (*CRC Chair*)

Andrew G. Kirk; B.Sc.(Brist.), Ph.D.(Lond.) (*William Dawson Scholar*)

Tho Le-Ngoc; M.Eng.(McG.), Ph.D.(Ott.), F.I.E.E.E.

Harry Leib; B.Sc.(Technion), Ph.D.(Tor.)

Martin D. Levine; B.Eng., M.Eng.(McG.), Ph.D.(Lond.), F.C.I.A.R., F.I.E.E.E., Eng.

David A. Lowther; B.Sc.(Lond.), Ph.D.(C.N.A.A.), F.C.A.E., Eng. (*James McGill Professor*)

David V. Plant; M.S., Ph.D.(Brown), F.I.E.E.E., F.O.S.A., F.E.I.C., F.C.A.E., P.Eng. (*James McGill Professor*)

Gordon Roberts; B.A.Sc.(Wat.), M.A.Sc., Ph.D.(Tor.), Eng. (*James McGill Professor*) F.I.E.E.E.

Jonathan P. Webb; B.A., Ph.D.(Cant.)

##### Associate Professors

Ramesh Abhari; M.A.Sc.(Tehran), Ph.D.(Tor.)

Tal Arbel; M.Eng., Ph.D.(McG.)

**Associate Professors**

Jan Bajcsy; B.Sc.(Harv.), M.Eng., Ph.D.(Princ.)  
 Benoit Boulet; B.Sc.(Laval), M.Eng.(McG.), Ph.D.(Tor.) (*William Dawson Scholar*)  
 Mark Coates; B.Eng.(Adel.), Ph.D.(Camb.)  
 Jeremy R. Cooperstock; A.Sc.(Br. Col.), M.Sc., Ph.D.(Tor.)  
 Mourad El-Gamal; B.Sc.(Cairo), M.Sc.(Nashville), Ph.D.(McG.) (*William Dawson Scholar*)  
 Dennis Giannacopoulos; M.Eng., Ph.D.(McG.)  
 Warren Gross; B.A.Sc.(Wat.), M.A.Sc., Ph.D.(Tor.)  
 Roni Khazaka; M.Eng., Ph.D.(Car.)  
 Fabrice Labeau; M.S., Ph.D.(Louvain)  
 Steve McFee; B.Eng., Ph.D.(McG.)  
 Hannah Michalska; B.Sc., M.Sc.(Warsaw), Ph.D.(Lond.)  
 Milica Popovich; B.Sc.(Colo.), M.Sc., Ph.D.(N'western)  
 Ioannis Psaromiligkos; B.Sc.(Patras), M.Sc., Ph.D.(Buffalo)  
 Richard Rose; B.Sc., M.S.(Ill.), Ph.D.(GIT)  
 Ishiang Shih; M.Eng., Ph.D.(McG.)  
 Zeljko Zilic; B.Eng.(Zagreb), M.Sc., Ph.D.(Tor.)

**Assistant Professors**

François Bouffard; B.Eng., Ph.D.(McG.)  
 Vamsy Chodavarapu; B.Eng.(Osmania), M.S., Ph.D.(NYU)  
 Odile Liboiron-Ladouceur; B.Eng.(McG.), M.Sc., Ph.D.(Col.)  
 Aditya Mahajan, B.Tech.(Indian IT), M.S., Ph.D.(Mich.)  
 Brett Meyer; B.S.(Wisc.), M.S., Ph.D.(Carn. Mell)  
 Zetian Mi; B.A.Sc.(Beijing), M.Sc.(Iowa), Ph.D.(Mich.)  
 Sam Musallam; B.Sc., M.Sc., Ph.D.(Tor.)  
 Michael Rabbat; B.S.(Ill.), M.S.(Rice), Ph.D.(Wisc.)  
 Martin Rochette; B.A., M.Eng., Ph.D.(Laval)  
 Thomas Szkopek; B.A.Sc., M.A.Sc.(Tor.), Ph.D.(Calif.-LA)  
 Mai Vu; M.S., Ph.D.(Stan.)  
 Haibo Zeng; B.E., M.E.(Tsinghua), M.S., Ph.D.(Calif., Berk.)

**Associate Members**

Gregory Dudek, Alan C. Evans, William R. Funnell, Henrietta L. Galiana, Jean Gotman, David Juncker, Robert E. Kearney, Nathaniel J. Quitoriano

**Adjunct Professors**

Ray Bartnikas, Danny Grant, Cedric Guss, Ricardo Izquierdo, Cheng K. Jen, Innocent Kamwa, Irene Leszkowicz, Martin Maier, Shie Mannor, Douglas O'Shaughnessy, Katarzyna Radecka, Robert Sabourin, Joshua David Schwartz, Leszek Szczecinski, Claude Thibeault, Kenneth D. Wagner

**11.4.5 Master of Engineering (M.Eng.); Electrical Engineering (Thesis) (46 credits)**

The M.Eng. Thesis program must be completed on a full-time basis in three years. The following requirements must be met:

**Thesis Courses (28 credits)**

ECSE 691 (4) Thesis Research 1



|          |     |                   |
|----------|-----|-------------------|
| ECSE 692 | (4) | Thesis Research 2 |
| ECSE 693 | (4) | Thesis Research 3 |
| ECSE 694 | (4) | Thesis Research 4 |
| ECSE 695 | (4) | Thesis Research 5 |
| ECSE 696 | (4) | Thesis Research 6 |
| ECSE 697 | (4) | Thesis Research 7 |

Students who choose the thesis option must register for all 28 credits during the three terms of residency.

### Complementary Courses

(18 credits minimum)

At least six 500-, 600-, or 700-level courses, normally with a minimum of four ECSE 500- or 600-level courses.\*

\* Under special circumstances, and subject to Departmental approval, students may be allowed to take more than two non-Departmental courses; a letter of recommendation from their supervisor outlining the reason for such an action is required.

Under no circumstances will more than three non-Departmental courses be permitted.

## 11.4.6 Master of Engineering (M.Eng.); Electrical Engineering (Thesis) — Computational Science and Engineering (47 credits)

Program under review for 2012-2013 - may not be offered.

### Thesis Courses (28 credits)

|          |     |                   |
|----------|-----|-------------------|
| ECSE 691 | (4) | Thesis Research 1 |
| ECSE 692 | (4) | Thesis Research 2 |
| ECSE 693 | (4) | Thesis Research 3 |
| ECSE 694 | (4) | Thesis Research 4 |
| ECSE 695 | (4) | Thesis Research 5 |
| ECSE 696 | (4) | Thesis Research 6 |
| ECSE 697 | (4) | Thesis Research 7 |

### Required Course (1 credit)

|            |      |   |
|------------|------|---|
| ECSE 670D1 | (.5) | Computational Science Engineering Seminar |
| ECSE 670D2 | (.5) | Computational Science Engineering Seminar |

### Complementary Courses (18 credits)

(minimum 18 credits)

Six courses at the graduate level (500 or above) are required (minimum 18 credits), with a grade of B- or better. Two courses (minimum 6 credits) from List A, and two courses (minimum 6 credits) from List B. At least two of the courses taken from Lists A and B must be from outside the Department of Electrical and Computer Engineering.

#### List A: Scientific Computer Courses

|          |     |                                  |
|----------|-----|----------------------------------|
| CIVE 602 | (4) | Finite Element Analysis          |
| COMP 522 | (4) | Modelling and Simulation         |
| COMP 540 | (3) | Matrix Computations              |
| COMP 566 | (3) | Discrete Optimization 1          |
| MATH 578 | (4) | Numerical Analysis 1             |
| MATH 579 | (4) | Numerical Differential Equations |

**List B: Applications and Specialized Methods Courses**

|          |     |   |
|----------|-----|---|
| ATOC 512 | (3) | Atmospheric and Oceanic Dynamics          |
| ATOC 513 | (3) | Waves and Stability                       |
| ATOC 515 | (3) | Turbulence in Atmosphere and Oceans       |
| CIVE 514 | (3) | Structural Mechanics                      |
| CIVE 572 | (3) | Computational Hydraulics                  |
| CIVE 603 | (4) | Structural Dynamics                       |
| COMP 557 | (3) | Fundamentals of Computer Graphics         |
| COMP 558 | (3) | Fundamentals of Computer Vision           |
| COMP 567 | (3) | Discrete Optimization 2                   |
| COMP 621 | (4) | Program Analysis and Transformations      |
| COMP 642 | (4) | Numerical Estimation Methods              |
| COMP 767 | (4) | Advanced Topics: Applications 2           |
| ECSE 507 | (3) | Optimization and Optimal Control          |
| ECSE 532 | (3) | Computer Graphics                         |
| ECSE 547 | (3) | Finite Elements in Electrical Engineering |
| ECSE 549 | (3) | Expert Systems in Electrical Design       |
| MATH 555 | (4) | Fluid Dynamics                            |
| MATH 560 | (4) | Optimization                              |
| MATH 761 | (4) | Topics in Applied Mathematics 1           |
| MECH 533 | (3) | Subsonic Aerodynamics                     |
| MECH 537 | (3) | High-Speed Aerodynamics                   |
| MECH 538 | (3) | Unsteady Aerodynamics                     |
| MECH 539 | (3) | Computational Aerodynamics                |
| MECH 541 | (3) | Kinematic Synthesis                       |
| MECH 572 | (3) | Introduction to Robotics                  |
| MECH 573 | (3) | Mechanics of Robotic Systems              |
| MECH 576 | (3) | Geometry in Mechanics                     |
| MECH 577 | (3) | Optimum Design                            |
| MECH 610 | (4) | Fundamentals of Fluid Dynamics            |
| MECH 620 | (4) | Advanced Computational Aerodynamics       |
| MECH 632 | (4) | Theory of Elasticity                      |
| MECH 642 | (4) | Advanced Dynamics                         |
| MECH 650 | (4) | Fundamentals of Heat Transfer             |
| MECH 654 | (4) | Compt. Fluid Flow and Heat Transfer       |

**11.4.7 Master of Engineering (M.Eng.); Electrical Engineering (Non-Thesis) (47 credits)**

Full-time students must complete the program in three years. A part-time program is possible. The following requirements must be met:

**Research Project**

(11-20 credits)

The credits assigned to the project can vary between 11 and 20 depending on the number of course credits taken from the following courses:

|          |     |                  |
|----------|-----|------------------|
| ECSE 651 | (1) | M.Eng. Project 1 |
| ECSE 652 | (2) | M.Eng. Project 2 |
| ECSE 653 | (3) | M.Eng. Project 3 |
| ECSE 654 | (4) | M.Eng. Project 4 |
| ECSE 655 | (5) | M.Eng. Project 5 |
| ECSE 656 | (5) | M.Eng. Project 6 |

Students who choose the non-thesis option must register for the project courses during the three required terms of residency.

### Complementary Courses

(27-36 credits)

At least nine 500-, 600-, or 700-level courses, normally with a minimum of six 500- or 600-level courses (ECSE only).\*

\* Under special circumstances, and subject to Departmental approval, students may be allowed to take more than three non-Departmental courses; a letter of recommendation from their supervisor outlining the reason for such an action is required.

Under no circumstance will more than four non-Departmental courses be permitted.

## 11.4.8 Doctor of Philosophy (Ph.D.); Electrical Engineering

### Thesis

A thesis for the doctoral degree must constitute original scholarship and must be a distinct contribution to knowledge. It must show familiarity with previous work in the field and must demonstrate ability to plan and carry out research, organize results, and defend the approach and conclusions in a scholarly manner. The research presented must meet current standards of the discipline; as well, the thesis must clearly demonstrate how the research advances knowledge in the field. Finally, the thesis must be written in compliance with norms for academic and scholarly expression and for publication in the public domain.

### Required Courses

|          |     |                              |
|----------|-----|------------------------------|
| ECSE 701 | (0) | Ph.D. Qualifying Examination |
| ECSE 702 | (0) | Ph.D. Research Plan Proposal |
| ECSE 703 | (0) | Doctoral Research Seminar    |

In addition to the successful completion of the required courses above, students must complete the courses prescribed by the student's Supervisory Committee.

---

## 11.5 Mechanical Engineering

### 11.5.1 Location

Department of Mechanical Engineering  
 Macdonald Engineering Building  
 817 Sherbrooke Street West, Room MD-270  
 Montreal, QC H3A 0C3  
 Canada

Telephone (Admissions & Scholarships): 514-398-8869  
 Telephone (All other inquiries): 514-398-6281  
 Fax: 514-398-7365

Email (Admissions & Scholarships): [grad.mecheng@mcgill.ca](mailto:grad.mecheng@mcgill.ca)  
 Email (All other inquiries): [gradcoordinator.mecheng@mcgill.ca](mailto:gradcoordinator.mecheng@mcgill.ca)  
 Website: [www.mcgill.ca/mecheng/grad](http://www.mcgill.ca/mecheng/grad)

## 11.5.2 About Mechanical Engineering

Mechanical engineers are traditionally concerned with the conception, design, implementation, and operation of mechanical systems. Common fields of work include aerospace, energy, manufacturing, machinery, and transportation. Due to the broad nature of the discipline, there is usually a high demand for mechanical engineers with advanced training.

The Department includes more than 30 faculty members and 200 graduate students, and is housed primarily within the recently renovated Macdonald Engineering building. The Department contains state-of-the-art experimental facilities (including a major wind tunnel facility) and has extensive computational facilities. Professors within the Department collaborate widely with professors in other units, often through research centres including the Centre for Intelligent Machines (CIM); the McGill Institute for Advanced Materials (MIAM); and the Montreal Neurological Institute and Hospital (MNI). The research interests within the Department are very broad and fall largely within the following five areas:

- aerodynamics, fluids, and thermal engineering
- mechanics of materials and structures
- dynamics and control
- design and manufacturing
- bioengineering

Within these areas, specific topics of research are given in the following:

### **Aerodynamics, fluids, and thermal engineering**

Experimental fluid mechanics and aerodynamics, aeroelasticity, and aeroacoustics; theoretical fluid mechanics; turbulence; mixing in turbulent flows; fluid flow control; fluid-structure interactions; computational fluid dynamics, multidisciplinary optimization, and computer flow visualization; heat transfer; combustion, shock wave physics, energetic materials, high-speed reacting flows, hypersonic propulsion, and alternative fuels.

### **Mechanics of materials and structures**

Composite materials: structural design, analysis, manufacturing, and processing; micro/nano mechanics; MEMS/NEMS; adaptronic structures; thermomechanics, wave propagation, and computational mechanics.

### **Dynamics and control**

Multibody systems, legged and wheeled vehicles, compliant mechanisms, and kinematic geometry; tethered systems, lighter-than-air craft, and underwater vehicles; spacecraft dynamics and space robotics; modelling and simulation; fluid-structure interactions, nonlinear and chaotic dynamics; dynamics of bladed assemblies.

### **Design and manufacturing**

Design theory and methodology, design optimization; biomimetics; machine tools and systems, manufacturing processes, and management and control; micro/nano machining; wear and comminution processes.

### **Bioengineering**

Biomechanics, biomaterials, blood and respiratory flows, mechanics of soft tissues, cardiovascular devices, image processing for medical diagnostics, voice production.

### **Programs Offered**

The Department offers programs of study leading to the M.Eng., M.Sc., and Ph.D. degrees in Mechanical Engineering. Both M.Eng. (Thesis) and M.Eng. (Non-Thesis) programs are offered.

There are several options for completing master's degrees that do not involve the completion of a thesis. The M.Eng. (Non-Thesis) program has more extensive course requirements and will appeal to students who desire to gain both a broad understanding of subjects within Mechanical Engineering as well as in-depth information in a specific area. Two other options for non-thesis master's degrees are described below.

#### ***section 11.5.5: Master of Engineering (M.Eng.); Mechanical Engineering (Thesis) (45 credits)***

The M.Eng. (Thesis) program requires the completion of 16 credits of technical complementary courses, a seminar course, and a thesis. The thesis involves advanced research supervised by one or more professors who are internationally known in their field. This program prepares students for either an industrial research career or further academic research at the Ph.D. level.

#### ***section 11.5.6: Master of Science (M.Sc.); Mechanical Engineering (Thesis) (45 credits)***

Please consult the Department for more information on this program.

#### ***section 11.5.7: Master of Engineering (M.Eng.); Mechanical Engineering (Thesis) — Computational Science and Engineering (46 credits)***

For students who would like to concentrate on computational work for their research, the M.Eng. (Thesis) – Computational Science and Engineering (CSE) option is available. CSE is a rapidly growing multidisciplinary area with connections to the sciences, engineering, mathematics, and computer science. CSE focuses on the development of problem-solving methodologies and robust tools for the solution of scientific and engineering problems. In this program, students choose their complementary courses from within a list of scientific computing courses and courses that involve applications and specialized methods.

**section 11.5.8: Master of Engineering (M.Eng.); Mechanical Engineering (Non-Thesis) (45 credits)**

Students in this program must complete four required courses in addition to 16 credits of complementary courses and a seminar course. They also complete a project that is less involved than a thesis and may involve a limited research project, or a technical or design study. Graduates of this program are well-prepared for carrying out research and development in industry and may also proceed to further research at the Ph.D. level.

**section 11.5.9: Master of Engineering (M.Eng.); Aerospace Engineering (Non-Thesis) (45 credits)**

The M.Eng. Aerospace Degree is offered to students who wish to specialize in the general area of aerospace engineering. This degree is given in conjunction with Concordia University, *École Polytechnique*, *Université Laval*, *Université de Sherbrooke*, and *École de Technologie Supérieure*. Students registered at McGill are required to take two courses from two other institutions.

The aerospace industry is strongly established in Quebec. Representatives of the aerospace industry therefore requested that measures be taken to provide for qualified scientists in aerospace. Five universities offering courses in engineering came together to offer a Master's degree program in the field of aeronautics and space technology. This program is offered to students who wish to specialize in these disciplines. The industry's participation is a special feature of this program. The universities and the participating industries, with the cooperation of the Centre of Aerospace Manpower Activities in Quebec (CAMAQ), have formed a Coordinating Committee, CIMGAS, to arrange for industrial internships and case study courses for the students and to implement specific program developments to meet the needs of the industry.

The M.Eng. (Aerospace) program requires a minimum of 45 credits, including an "Industrial Stage" (i.e., engineering work in an aerospace industry) of four months. Enrolment is limited to the number of industrial stages available, so admission to the program is typically quite competitive. While intended to be a full-time program, the M.Eng. (Aerospace) program may be completed on a part-time basis over a maximum of five years. By the time of completion of the program, graduates are extremely well-prepared to enter into a career in the aerospace industry.

Depending on their background, students would specialize in one of the four areas:

1. Aeronautics and Space Engineering
2. Avionics and Control
3. Aerospace Materials and Structures
4. Virtual Environment

**section 11.5.10: Master of Management (M.M.M.); Manufacturing Management (Non-Thesis) (57 credits)**

The Master in Manufacturing Management (M.M.M.) program attracts business professionals from around the world who wish to pursue a career in the effective management of global operations and supply chain. It is a professionally-oriented graduate program offered jointly through the Faculties of Engineering and Management, aimed at those candidates with engineering or science backgrounds.

In just eleven months of academic studies, M.M.M. students sharpen their expertise in supply chain and operations through an intensive program that includes:

- A challenging curriculum
- Extensive industrial interaction
- Innovative research projects

Additionally, students are exposed to the latest trends and developments in management and participate in professional development seminars to leverage their communication and leadership skills. After less than one year of studies, participants complete a paid work term at an industrial location. This is a unique opportunity to work on a real-world project with an M.M.M. partner company in North America.

**section 11.5.11: Doctor of Philosophy (Ph.D.); Mechanical Engineering**

In the Ph.D. program, students are required to demonstrate a significant new contribution to their field of research, as documented in an externally reviewed thesis. The research is carried out under the supervision of professors that are leaders in their field. Since research in Mechanical Engineering is often interdisciplinary in nature, it is common for Ph.D. students to have a co-supervisor in addition to their principle supervisor. Graduates from this program typically proceed to careers in research in either industrial or academic environments.

**11.5.3 Mechanical Engineering Admission Requirements and Application Procedures**

**Revision, October 2012. Start of revision.**

**11.5.3.1 Admission Requirements**

The general rules of Graduate and Postdoctoral Studies apply. Candidates who come from other institutions are expected to have an academic background equivalent to the undergraduate curriculum in mechanical engineering at McGill or to make up any deficiencies in a Qualifying year.

Applicants to the M.Eng. (Thesis) program, including the CSE Option, must hold an undergraduate degree (or equivalent) in Engineering. Applicants who hold an undergraduate degree in a non-Engineering discipline – typically the Physical Sciences – may apply for the M.Sc. (Thesis) program, which is governed by the same regulations as the M.Eng. (Thesis) program.

Applicants to the M.Eng. (Non-Thesis) program must hold an undergraduate degree (or equivalent) in Mechanical Engineering.

Applicants to the M.Eng. (Aerospace) program must hold an undergraduate degree (or equivalent) in Engineering.

Applicants to the Ph.D. program must have successfully completed a master's degree program (or equivalent) in Engineering or the Physical Sciences. Students are not admitted directly from an undergraduate program into the Ph.D. program.

In the case of all programs, applicants must have successfully completed their prior degree(s) with a minimum CGPA equivalent to 3.3 on a scale of 4.0. Satisfaction of these minimum requirements does not guarantee admission. Applicants to graduate studies whose mother tongue is not English, and who have not completed an undergraduate or graduate degree from a recognized foreign institution where English is the language of instruction or from a recognized Canadian institution (anglophone or francophone), must submit official results of either a TOEFL or an IELTS test. The minimum score required is 92 for the Internet-based TOEFL test, with each component score not less than 20 (or 580 on the paper-based test, with a minimum of 4.0 on the “Test of Written English”); or a minimum overall band of 7.0 on the IELTS test.

### 11.5.3.2 Application Procedures

McGill’s online application form for graduate program candidates is available at [www.mcgill.ca/gradapplicants/apply](http://www.mcgill.ca/gradapplicants/apply).

See [section 6.3: Application Procedures \(for All Admissions Starting Summer 2013\)](#) for detailed application procedures.

Please consult [www.mcgill.ca/mecheng/grad/admissions/doc](http://www.mcgill.ca/mecheng/grad/admissions/doc) for further details on required application documents.

#### 11.5.3.2.1 Additional Requirements

The items and clarifications below are additional requirements set by this department:

- two official Referee Reports
- Personal Statement – one page
- an updated list of publications
- list of extra-curricular activities
- Curriculum Vitae

#### 11.5.3.3 Dates for Guaranteed Consideration

| Canadian        | International    | Special/Exchange/Visiting              |
|-----------------|------------------|--|
| Fall: Jan. 15   | Fall: Jan. 15    | Fall: Jan. 15                          |
| Winter: Oct. 15 | Winter: Sept. 15 | Winter: Same as Canadian/International |
| Summer: N/A     | Summer: N/A      | Summer: N/A                            |

Please also consult the Departmental website for the Dates for Guaranteed Consideration: [www.mcgill.ca/mecheng/grad/admissions/date](http://www.mcgill.ca/mecheng/grad/admissions/date).

Revision, October 2012. End of revision.

### 11.5.4 Mechanical Engineering Faculty

#### Chair

A.K. Misra

#### Graduate Program Director

L.G. Mongeau

#### Graduate Admissions and Scholarships Director

S. Nadarajah

#### Graduate Aerospace Director

P. Hubert

#### Graduate MMM Co-Director

V. Thomson

#### Emeritus Professors

A.M. Ahmed; B.Sc.(Dhaka), Ph.D.(McG.), Ing. (*Thomas Workman Emeritus Professor of Mechanical Engineering*)

**Emeritus Professors**

R. Knystautas; B.Eng., M.Eng., Ph.D.(McG.), Ing.

D.F. Mateescu; M.Eng.(Poli. U. Buch.), Ph.D.(Rom. Acad. Sci.), Doctor Honoris Causa(Poli. U. Buch.), A.F.A.I.A.A., F.C.A.S.I.

M.P. Païdoussis; B.Eng.(McG.), Ph.D.(Camb.), Ing., F.I. Mech.E., F.A.S.M.E., F.A.A.M., F.C.S.M.E., F.R.S.C., F.C.A.E. (*Thomas Workman Emeritus Professor of Mechanical Engineering*)

S.J. Price; B.Sc., Ph.D.(Brist.), P.Eng.

**Post-Retirement**

G. Bach; B.Sc.(Alta.), M.Sc.(Birm.), Ph.D.(McG.)

L. Kops; B.Eng., M.Eng., D.Sc., Eng.(Krakow Tech U.), Ing., F.C.I.R.P., F.A.S.M.E., F.C.S.M.E., M.S.M.E.

V. Thomson; B.Sc.(Windsor), Ph.D.(McM.) (*Werner Graupe Professor of Manufacturing Automation*)

P.J. Zsombor-Murray; B.Eng., M.Eng., Ph.D.(McG.), Ing., F.C.S.M.E.

**Professors**

M. Amabili; M.Sc.(Ancona), Ph.D.(Bologna), F.A.S.M.E. (*Canada Research Chair*)

J. Angeles; B.Sc., M.Sc.(UNAM Mexico), Ph.D.(Stan.), Eng., F.A.S.M.E., F.C.S.M.E., F.R.S.C. (*James McGill Professor*) (*NSERC Design Engineering Chair*)

B.R. Baliga; B.Tech.(I.I.T. Kanpur), M.Sc.(Case West.), Ph.D.(Minn.)

E. Fried; A.B.(Calif., Berk.), B.S.(Calif. Poly.), M.S., Ph.D.(Calif. Tech.) (*Canada Research Chair*)

W.G. Habashi; B.Eng., M.Eng.(McG.), Ph.D.(C'nell), Ing., F.A.S.M.E., F.A.I.A.A., F.C.A.E., F.R.S.C. (*NSERC-J. Armand Bombardier Industrial Research Chair*)

G. Haller; M.Sc.(Budapest), Ph.D.(Calif. Tech.) (*Faculty of Engineering Distinguished Professor*)

J.H.S. Lee; B.Eng.(McG.), M.Sc.(MIT), Ph.D.(McG.), Ing., F.R.S.C., F.C.A.E.

A.K. Misra; B.Tech.(I.I.T., Kgp.), Ph.D.(Br. Col.), P.Eng., F.A.A.S., F.A.I.A.A., F.C.A.E. (*Thomas Workman Professor of Mechanical Engineering*)

L. Mongeau; B.Sc., M.Sc.(École Poly., Montr.), Ph.D.(Penn St.), Ing. (*Canada Research Chair*)

M. Nahon; B.Sc.(Qu.), M.Sc.(Tor.), Ph.D.(McG.), Ing.

**Associate Professors**

L. Cortelezzi; M.Sc., Ph.D.(Calif. Tech.)

D.L. Frost; B.A.Sc.(Br. Col.), M.S., Ph.D.(Calif. Tech.), P.Eng.

A.J. Higgins; B.Sc.(Ill.), M.S., Ph.D.(Wash.)

P. Hubert; B.Eng., M.A.Sc.(École Poly., Montr.), Ph.D.(Br. Col.), Ing. (*Canada Research Chair*)

J Kövecses; M.Sc.(U. Miskolc), Ph.D.(Hung. Acad. Sci.), Ing.

T. Lee; M.S.(Portland St.), Ph.D.(Idaho)

L. Lessard; B.Eng.(McG.), M.Sc., Ph.D.(Stan.), Ing.

R. Mongrain; B.Sc., M.Sc.(Montr.), Ph.D.(École Poly., Montr.), Ing. (*William Dawson Scholar*)

L. Mydlarski; B.Sc.(Wat.), Ph.D.(C'nell)

S. Nadarajah; B.Sc.(Kansas), M.S., Ph.D.(Stan.)

D. Pasini; M.Sc.(Pavia), Ph.D.(Brist.), Ing.

P. Radziszewski; B.Sc.(Br. Col.), M.Sc., Ph.D.(Laval), Ing.

I. Sharf; B.A.Sc., Ph.D.(Tor.)

V. Thomson; B.Sc.(Windsor), Ph.D.(McM.) (*Werner Graupe Professor of Manufacturing Automation*)

E.V. Timofeev; M.Sc., Ph.D.(S.T.U. St. Petersburg), Eng., A.F.A.I.A.A.

S. Vengallatore; B.Tech.(B.H.U.), Ph.D.(MIT) (*Canada Research Chair*)

**Assistant Professors**

F. Barthelat; M.Sc.(Roch.), Ph.D.(N'western)  
 J. M. Bergthorson; B.Sc.(Manit.), M.Sc., Ph.D.(Calif. Tech.), P.Eng.  
 J.R. Forbes; B.Sci.(Wat.), M.Sc., Ph.D.(Tor.)  
 X. Liu; B.Eng., M.Eng.(Harbin), Ph.D.(Tor.)

**Non-Tenure-Track Faculty**

H. Attia, A. Sabih, D. Zorbas

**11.5.5 Master of Engineering (M.Eng.); Mechanical Engineering (Thesis) (45 credits)**

Applicants who hold an undergraduate degree in a non-Engineering discipline – typically the Physical Sciences – may apply for the M.Sc. (Thesis) program, which is governed by the same regulations as the M.Eng. (Thesis) program.

**Thesis Courses (28 credits)**

|           |      |                                 |
|-----------|------|---------------------------------|
| MECH 691* | (3)  | M.Eng. Thesis Literature Review |
| MECH 692  | (4)  | M.Eng. Thesis Research Proposal |
| MECH 693  | (3)  | M.Eng. Thesis Progress Report 1 |
| MECH 694  | (6)  | M.Eng. Thesis Progress Report 2 |
| MECH 695  | (12) | M.Eng. Thesis                   |

\* Note: MECH 691 must be taken in the first term of the student's program.

**Required Courses**

1 credit:

|          |     |         |
|----------|-----|---------|
| MECH 609 | (1) | Seminar |
|----------|-----|---------|

**Complementary Courses (16 credits)**

A minimum of 16 credits (500, 600, or 700 level), at least 8 of which must be from within the Faculty of Engineering. FACC courses will not count toward the complementary course credits.

**11.5.6 Master of Science (M.Sc.); Mechanical Engineering (Thesis) (45 credits)**

Applicants who hold an undergraduate degree in a non-Engineering discipline – typically the Physical Sciences – may apply for the M.Sc. (Thesis) program, which is governed by the same regulations as the M.Eng. (Thesis) program.

**Thesis Courses (28 credits)**

|           |      |                                 |
|-----------|------|---------------------------------|
| MECH 691* | (3)  | M.Eng. Thesis Literature Review |
| MECH 692  | (4)  | M.Eng. Thesis Research Proposal |
| MECH 693  | (3)  | M.Eng. Thesis Progress Report 1 |
| MECH 694  | (6)  | M.Eng. Thesis Progress Report 2 |
| MECH 695  | (12) | M.Eng. Thesis                   |

\* Note: MECH 691 must be completed in the first term of the student's program.

**Required Course**

1 credit:

|          |     |         |
|----------|-----|---------|
| MECH 609 | (1) | Seminar |
|----------|-----|---------|



**Complementary Courses (16 credits)**

A minimum of 16 credits (500, 600, or 700 level), at least 8 of which must be from within the Faculty of Engineering. FACC courses will not count toward the complementary course credits.

**11.5.7 Master of Engineering (M.Eng.); Mechanical Engineering (Thesis) — Computational Science and Engineering (46 credits)****Thesis Courses (28 credits)**

|           |      |                                 |
|-----------|------|---------------------------------|
| MECH 691* | (3)  | M.Eng. Thesis Literature Review |
| MECH 692  | (4)  | M.Eng. Thesis Research Proposal |
| MECH 693  | (3)  | M.Eng. Thesis Progress Report 1 |
| MECH 694  | (6)  | M.Eng. Thesis Progress Report 2 |
| MECH 695  | (12) | M.Eng. Thesis                   |

\* Note: MECH 691 must be complete in the first term of the student's program.

**Required Courses (2 credits)**

|          |     |   |
|----------|-----|---|
| MECH 609 | (1) | Seminar                                   |
| MECH 669 | (1) | Computational Science Engineering Seminar |

**Complementary Courses (16 credits)**

A minimum of 16 credits (500 level or above), at least 8 of which must be from within the Faculty of Engineering. Two courses (minimum 6 credits) from List A, and two courses (minimum 6 credits) from List B. At least two of the courses taken from Lists A and B must be from outside the Department of Mechanical Engineering. FACC courses will not count toward the complementary course credits.

**List A - Scientific Computing Courses:**

|          |     |                                  |
|----------|-----|----------------------------------|
| CIVE 602 | (4) | Finite Element Analysis          |
| COMP 522 | (4) | Modelling and Simulation         |
| COMP 540 | (3) | Matrix Computations              |
| COMP 566 | (3) | Discrete Optimization 1          |
| MATH 578 | (4) | Numerical Analysis 1             |
| MATH 579 | (4) | Numerical Differential Equations |

**List B - Applications and Specialized Methods Courses:**

|          |     |                                      |
|----------|-----|--------------------------------------|
| ATOC 512 | (3) | Atmospheric and Oceanic Dynamics     |
| ATOC 513 | (3) | Waves and Stability                  |
| ATOC 515 | (3) | Turbulence in Atmosphere and Oceans  |
| CIVE 572 | (3) | Computational Hydraulics             |
| CIVE 603 | (4) | Structural Dynamics                  |
| COMP 557 | (3) | Fundamentals of Computer Graphics    |
| COMP 558 | (3) | Fundamentals of Computer Vision      |
| COMP 567 | (3) | Discrete Optimization 2              |
| COMP 621 | (4) | Program Analysis and Transformations |
| COMP 642 | (4) | Numerical Estimation Methods         |
| COMP 767 | (4) | Advanced Topics: Applications 2      |
| ECSE 507 | (3) | Optimization and Optimal Control     |

|          |     |   |
|----------|-----|---|
| ECSE 532 | (3) | Computer Graphics                         |
| ECSE 547 | (3) | Finite Elements in Electrical Engineering |
| ECSE 549 | (3) | Expert Systems in Electrical Design       |
| MATH 555 | (4) | Fluid Dynamics                            |
| MATH 560 | (4) | Optimization                              |
| MATH 761 | (4) | Topics in Applied Mathematics 1           |
| MECH 533 | (3) | Subsonic Aerodynamics                     |
| MECH 537 | (3) | High-Speed Aerodynamics                   |
| MECH 538 | (3) | Unsteady Aerodynamics                     |
| MECH 539 | (3) | Computational Aerodynamics                |
| MECH 541 | (3) | Kinematic Synthesis                       |
| MECH 572 | (3) | Introduction to Robotics                  |
| MECH 573 | (3) | Mechanics of Robotic Systems              |
| MECH 576 | (3) | Geometry in Mechanics                     |
| MECH 577 | (3) | Optimum Design                            |
| MECH 610 | (4) | Fundamentals of Fluid Dynamics            |
| MECH 620 | (4) | Advanced Computational Aerodynamics       |
| MECH 632 | (4) | Theory of Elasticity                      |
| MECH 642 | (4) | Advanced Dynamics                         |
| MECH 650 | (4) | Fundamentals of Heat Transfer             |
| MECH 654 | (4) | Compt. Fluid Flow and Heat Transfer       |

#### 11.5.8 Master of Engineering (M.Eng.); Mechanical Engineering (Non-Thesis) (45 credits)

##### Research Project (13 credits)

|          |     |                   |
|----------|-----|-------------------|
| MECH 603 | (9) | M. Eng. Project 1 |
| MECH 604 | (3) | M. Eng. Project 2 |
| MECH 609 | (1) | Seminar           |

Note: Industrial liaison is encouraged in these courses taken near the end of the program.

##### Required Courses (16 credits)

|          |     |                                |
|----------|-----|--------------------------------|
| MECH 605 | (4) | Applied Mathematics 1          |
| MECH 610 | (4) | Fundamentals of Fluid Dynamics |
| MECH 632 | (4) | Theory of Elasticity           |
| MECH 642 | (4) | Advanced Dynamics              |

##### Complementary Courses (16 credits)

A minimum of 16 credits (500, 600, or 700 level) from the Faculty of Engineering may be selected by the student, based on interest and the choice of area of concentration. Courses at the graduate level from other faculties may also be taken, with prior approval from the student's project supervisor and the Graduate Program Director. A maximum of 3 credits of FACC courses at the 500, 600, or 700 level may be credited toward the degree.

#### 11.5.9 Master of Engineering (M.Eng.); Aerospace Engineering (Non-Thesis) (45 credits)

The M.Eng. Aerospace Degree is offered to the students who wish to specialize in the general area of aerospace engineering. This degree is given in conjunction with Concordia University, École Polytechnique, Université Laval, Université de Sherbrooke, and École de Technologie Supérieure. Students registered at McGill are required to take two courses from two other institutions.

Depending on their background, students would specialize in one of the four areas:

1. Aeronautics and Space Engineering
2. Avionics and Control
3. Aerospace Materials and Structures
4. Virtual Environment

**Required Courses (9 credits)**

|          |     |                        |
|----------|-----|------------------------|
| MECH 687 | (3) | Aerospace Case Studies |
| MECH 688 | (6) | Industrial Stage       |

**Complementary Courses (36 credits)**

The other courses, depending on the area of concentration, will be chosen in consultation with an Aerospace Engineering Adviser. A maximum of 3 credits of FACC courses at the 500, 600, or 700 level may be credited toward the degree.

**11.5.10 Master of Management (M.M.M.); Manufacturing Management (Non-Thesis) (57 credits)**

Note: This program is either a 56- or 57-credit program.

**Required Courses - General Business and Management (11 credits)**

|          |     |                           |
|----------|-----|---------------------------|
| MGCR 651 | (4) | Managing Resources        |
| MGCR 652 | (4) | Value Creation            |
| MGSC 608 | (3) | Data Decisions and Models |

**Complementary Courses - General Business and Management (6 credits)**

6 credits from the following:

|          |     |   |
|----------|-----|---|
| ACCT 624 | (3) | Management Accounting: Planning & Control |
| INDR 603 | (3) | Industrial Relations                      |
| ORGB 625 | (3) | Managing Organizational Change            |
| ORGB 632 | (3) | Managing Teams in Organizations           |
| ORGB 633 | (3) | Managerial Negotiations                   |
| ORGB 640 | (3) | The Art of Leadership                     |
| ORGB 685 | (3) | Cross Cultural Management                 |

**Required Courses - Manufacturing and Supply Chain Operations (15 credits)**

|          |     |                                    |
|----------|-----|------------------------------------|
| MECH 524 | (3) | Computer Integrated Manufacturing  |
| MGSC 602 | (3) | Strategic Management of Operations |
| MGSC 603 | (3) | Logistics Management               |
| MGSC 605 | (3) | Total Quality Management           |
| MGSC 631 | (3) | Analysis: Production Operations    |

**Complementary Courses - Manufacturing and Supply Chain Operations (13 credits)**

(12-13 credits)

6 credits from the following:

|          |     |   |
|----------|-----|---|
| MECH 526 | (3) | Manufacturing and the Environment                   |
| MGSC 575 | (3) | Applied Time Series Analysis Managerial Forecasting |

|          |     |   |
|----------|-----|---|
| MGSC 601 | (3) | Management of Technology in Manufacturing |
| MGSC 615 | (3) | Procurement and Distribution              |

6-7 credits from the following:

0 or 6 credits from:

Discrete Manufacturing Option

|          |     |                                |
|----------|-----|--------------------------------|
| MECH 528 | (3) | Product Design                 |
| MECH 529 | (3) | Discrete Manufacturing Systems |

0-7 credits from:

Process Manufacturing Option

|          |     |   |
|----------|-----|---|
| CHEE 571 | (3) | Small Computer Applications: Chemical Engineering |
| CHEE 641 | (4) | Chemical Reaction Engineering                     |

#### Required Courses - Industry (12 credits)

|          |     |                                  |
|----------|-----|----------------------------------|
| MECH 627 | (9) | Manufacturing Industrial Stage   |
| MECH 628 | (2) | Manufacturing Case Studies       |
| MECH 629 | (1) | Manufacturing Industrial Seminar |

#### 11.5.11 Doctor of Philosophy (Ph.D.); Mechanical Engineering

Candidates normally register for the M.Eng. degree in the first instance. However, in exceptional cases where the research work is proceeding very satisfactorily, or where the equivalent of the M.Eng. degree has been completed at another university, candidates may be permitted to proceed directly to the Ph.D. degree without submitting a master's thesis as long as they have satisfied the course requirements for the M.Eng. degree.

#### Thesis

A thesis for the doctoral degree must constitute original scholarship and must be a distinct contribution to knowledge. It must show familiarity with previous work in the field and must demonstrate ability to plan and carry out research, organize results, and defend the approach and conclusions in a scholarly manner. The research presented must meet current standards of the discipline; as well, the thesis must clearly demonstrate how the research advances knowledge in the field. Finally, the thesis must be written in compliance with norms for academic and scholarly expression and for publication in the public domain.

#### Required Courses

|          |     |  |
|----------|-----|--|
| MECH 700 | (0) | Ph.D. Literature Review                          |
| MECH 701 | (0) | Ph.D. Thesis Proposal                            |
| MECH 702 | (0) | Ph.D. Comprehensive Preliminary Oral Examination |

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#### 11.6 Mining and Materials Engineering

##### 11.6.1 Location

Department of Mining and Materials Engineering  
 M.H. Wong Building  
 3610 University Street  
 Montreal, QC H3A 0C5  
 Canada

Email: [barbara.hanley@mcgill.ca](mailto:barbara.hanley@mcgill.ca)

Website: [www.mcgill.ca/minmat](http://www.mcgill.ca/minmat)

Mining Engineering  
Telephone: 514-398-2215  
Fax: 514-398-7099

Materials Engineering  
Telephone: 514-398-4383  
Fax: 514-398-4492

### 11.6.2 About Mining and Materials Engineering

Graduate programs leading to M.Eng., M.Sc., and Ph.D. research degrees are available in the areas of Geomechanics; Mining Environments; Strategic Mine Planning and Optimization; Stochastic Modelling; Operations Research; Mineral Economics; Materials Handling; Process Metallurgy; Computational Thermodynamics; Hydrometallurgy; Effluent and Waste Treatment; Mineral Processing; Metal Casting and CFD Modelling; Surface Engineering; Composites; Ceramics; Electron Microscopy; Automotive and Aerospace Materials; Biomaterials; Nanomaterials; Nanoelectronic Materials; Multiscale Modelling of Materials; and Electronic and Solar Cell Materials.

Course programs leading to the M.Eng. (Project) degree in Mining or Materials Engineering and the Graduate Diploma in Mining Engineering are also available.

Special programs are available for those holding degrees in subjects other than Materials or Mining Engineering (e.g., Chemical, Civil, or Mechanical Engineering, Chemistry, Physics, Geology).

#### *section 11.6.5: Master of Engineering (M.Eng.); Mining and Materials Engineering (Thesis) (45 credits)*

The M.Eng. (Thesis) degree is open to graduates holding the B.Eng. degree or its equivalent in Materials Engineering, Mining Engineering, or other related engineering fields.

#### *section 11.6.6: Master of Science (M.Sc.); Mining and Materials Engineering (Thesis) (45 credits)*

The M.Sc. (Thesis) degree is open to graduates holding the B.Sc. degree in Chemistry, Materials Science, Physics, Geology, or related fields.

**Direct Transfer from a Master's to a Ph.D.** – Students enrolled in a master's program (thesis) may transfer into the Ph.D. program without obtaining a master's degree if they have satisfied the following:

1. they have a minimum CGPA of 3.3 for the last two full-time undergraduate years;
2. they have been in the master's program for less than 15 months;
3. they have passed with the minimum CGPA of 3.6 at least three of the required master's courses, and given one seminar with a minimum grade of A-;
4. they have obtained a letter of recommendation from their supervisor.

#### **Direct Entry from B.Eng. to Ph.D.**

Exceptional B.Eng. graduates may be admitted directly to the Ph.D. program. The Ph.D. 1 students admitted through this process are required to complete at least four graduate-level courses.

#### **M.Eng. (Project) Degrees**

#### *section 11.6.7: Master of Engineering (M.Eng.); Mining and Materials Engineering (Non-Thesis) (45 credits)*

The Master of Engineering (Project) program (Materials option) is primarily designed to train people with appropriate engineering or scientific backgrounds to allow them to work effectively in the metals and materials industries. The Master of Engineering (Project) program (Mining option) is primarily designed for graduates from mining engineering programs who have received adequate academic training in modern mining technology, mineral economics, computer programming, and probabilities and statistics.

#### *section 11.6.8: Master of Engineering (M.Eng.); Mining and Materials Engineering (Non-Thesis) — Environmental Engineering (45 credits)*

This interdepartmental graduate program leads to a master's degree in Environmental Engineering. The objective of the program is to train environmental professionals at an advanced level. The program is designed for individuals with an undergraduate degree in engineering. This non-thesis degree falls within the M.Eng. and M.Sc. programs, which are offered in the Departments of Bioresource, Chemical, Civil, and Mining and Materials Engineering. The Environmental Engineering program emphasizes interdisciplinary fundamental knowledge, practical perspectives, and awareness of environmental issues through a wide range of technical and non-technical courses offered by collaborating departments and faculties at the University. Students are strongly encouraged to consult with the Graduate Program Director prior to enrolling in the program.

#### *section 11.6.9: Doctor of Philosophy (Ph.D.); Mining and Materials Engineering*

Please consult the Department for more information about the Ph.D.

**section 11.6.10: Graduate Diploma in Mining Engineering (30 credits)**

This program normally requires one academic year of full-time study to complete. Candidates are required to take an integrated group of courses based on their academic background.

**11.6.3 Mining and Materials Engineering Admission Requirements and Application Procedures**

Revision, October 2012. Start of revision.

**11.6.3.1 Admission Requirements**

The Graduate Diploma in Mining Engineering is open to graduates with suitable academic standing in any branch of engineering or science. It is designed to provide a sound technical mining engineering background to candidates intending to work in the minerals industry.

The M.Eng. (Thesis) degree is open to graduates holding the B.Eng. degree or its equivalent in Materials Engineering, Mining Engineering, or other related engineering fields.

The M.Sc. (Thesis) degree is open to graduates holding the B.Sc. degree in Chemistry, Materials Science, Physics, Geology, or related fields.

The Master of Engineering (Project) program (Materials option) is primarily designed to train people with appropriate engineering or scientific backgrounds to allow them to work effectively in the metals and materials industries. Industrial experience is favourably viewed for entrance into the program, but is not considered a necessity.

The Master of Engineering (Project) program (Mining option) is primarily designed for graduates from mining engineering programs who have received adequate academic training in modern mining technology, mineral economics, computer programming, and probabilities and statistics. Students without this academic training must follow a Qualifying term. Industrial experience is favourably viewed for entrance into the program, but is not considered a necessity.

The Master of Engineering (Project) program (Environmental Engineering option) is also offered.

Ph.D. degree applicants may either be “directly transferred” from the M.Eng. or M.Sc. program (see below) or hold an acceptable master's degree in Materials Engineering, Mining Engineering, or other related fields, or under exceptional circumstances may be admitted directly from the bachelor's degree. In the latter case they are admitted to Ph.D. 1 as opposed to those holding a master's degree that are admitted to Ph.D. 2.

**11.6.3.2 Application Procedures**

McGill’s online application form for graduate program candidates is available at [www.mcgill.ca/gradapplicants/apply](http://www.mcgill.ca/gradapplicants/apply).

See *section 6.3: Application Procedures (for All Admissions Starting Summer 2013)* for detailed application procedures.

**11.6.3.3 Dates for Guaranteed Consideration**

| Canadian        | International    | Special/Exchange/Visiting |
|-----------------|------------------|---------------------------|
| Fall: Jan. 15   | Fall: Jan. 15    | Fall: Jan. 15             |
| Winter: Oct. 15 | Winter: Sept. 15 | Winter: Sept. 15          |
| Summer: Jan. 15 | Summer: Jan. 15  | Summer: Jan. 15           |

Revision, October 2012. End of revision.

**11.6.4 Mining and Materials Engineering Faculty**

**Department Chair**

Stephen Yue

**Graduate Program Director**

George P. Demopoulos

**Graduate Program Coordinator**

Barbara Hanley

**Emeritus Professors**

John E. Gruzleski; B.Sc., M.Sc.(Qu.), Ph.D.(Tor.), Eng., F.C.I.M., F.A.S.M. (*Gerald G. Hatch Emeritus Professor*)

John J. Jonas; B.Eng.(McG.), Ph.D.(Cant.), Eng., F.A.S.M., F.R.S.C. (*Henry Birks Emeritus Professor*)

**Emeritus Professors**

Gordon W. Smith; B.Eng., M.Eng., Ph.D.(McG.), Eng.

**Professors**

George P. Demopoulos; Dipl.Eng.(NTU Athens), M.Sc., Ph.D.(McG.), Eng., F.C.I.M. (*Gerald Hatch Faculty Fellow*)

Roussos Dimitrakopoulos; B.Sc.(Thessaloniki), M.Sc.(Alta.), Ph.D.(École Poly., Montr.) (*Canada Research Chair I*)

James A. Finch; B.Sc.(Birm.), M.Eng., Ph.D.(McG.), Eng., F.C.I.M., F.R.S.C. (*Gerald G. Hatch Professor*)

Raynald Gauvin; B.Eng., Ph.D.(Montr.), Eng.

Roderick I.L. Guthrie; B.Sc., Ph.D.(Lond.), D.I.C., Eng., A.R.S.M., F.C.I.M., R.R.S.C. (*William C. Macdonald Professor*)

Faramarz (Ferri) P. Hassani; B.Sc., Ph.D.(Nott.), C.Eng.(U.K. Reg.) (*George Boyd Webster Professor*)

Hani S. Mitri; B.Sc.(Cairo), M.Eng., Ph.D.(McM.), Eng.

Stephen Yue; B.Sc., Ph.D.(Leeds) (*James McGill Professor*) (*Lorne Trottier Chair in Aerospace Engineering*)

**Associate Professors**

Mathieu Brochu; B.Eng.(Laval), Ph.D.(McG.) (*Canada Research Chair II*)

Mainul Hasan; B.Eng.(Dhaka), M.Eng.(Dhahran), Ph.D.(McG.)

Frank Mucciardi; B.Eng., M.Eng., Ph.D.(McG.), Eng.

Showan Nazhat; B.Eng., M.Sc., Ph.D.(Lond.) (*Gerald Hatch Faculty Fellow*)

Mihriban Pegguleryuz; B.Sc., M.Eng.(Flor.), Ph.D.(McG.)

**Assistant Professors**

Kirk Bevan; Ph.D.(Purd.)

Marta Cerruti; B.Sc., Ph.D., Laurea in Chemistry(Torino)

Richard Chromik; B.Sc.(Penn. St.), M.Sc., Ph.D.(SUNY, Binghamton)

In-Ho Jung; B.Sc., M.Sc.(POSTECH), Ph.D.(École Poly., Montr.) (*Gerald Hatch Faculty Fellow*)

Nathaniel Quitarano; B.S.(Calif., Berk.), Ph.D.(MIT)

Jun Song; M.Sc., Ph.D.(Princ.)

Kristian Waters; M.Eng., M.Sc.(UMIST), Ph.D.(Birm.)

**Post-Retirement Professor**

Michel L. Bilodeau; B.A.Sc.(Montr.), M.Sc.(A.), Ph.D.(McG.), Eng.

**Adjunct Professors**

Mostafa Benzaazoua, Marc Betournay, Martin Bureau, Robin A.L. Drew, Elhachmi Essadiqi, Carlton Fuerst, Bryn Harris, Ahmad Hemami, Raad Jassim, Wynand Kleingeld, Eric Lifshin, Jan Nettet, Jacques Ouellet, Joe Stachulak, Michel Trudeau, Serge Vézina

**Lecturers**

John Mossop; B.Eng.(McG.)

Florence Paray; B.Eng.(CSP), M.Eng., Ph.D.(McG.)

**11.6.5 Master of Engineering (M.Eng.); Mining and Materials Engineering (Thesis) (45 credits)****Thesis Courses (27 credits)**

|          |     |                   |
|----------|-----|-------------------|
| MIME 690 | (6) | Thesis Research 1 |
| MIME 691 | (3) | Thesis Research 2 |

|          |     |                   |
|----------|-----|-------------------|
| MIME 692 | (6) | Thesis Research 3 |
| MIME 693 | (3) | Thesis Research 4 |
| MIME 694 | (6) | Thesis Research 5 |
| MIME 695 | (3) | Thesis Research 6 |

**Required Seminar (6 credits)**

One of the following courses:

Note: MIME 672D1 and MIME 672D2 should be taken concurrently

|            |     |                            |
|------------|-----|----------------------------|
| MIME 670   | (6) | Research Seminar 1         |
| MIME 672D1 | (3) | Rock Mechanics Seminar     |
| MIME 672D2 | (3) | Rock Mechanics Seminar     |
| MIME 673   | (6) | Mining Engineering Seminar |

**Required Courses (12 credits)**

Four 3-credit courses or the equivalent.

**11.6.6 Master of Science (M.Sc.); Mining and Materials Engineering (Thesis) (45 credits)**

**Thesis Courses (27 credits)**

|          |     |                   |
|----------|-----|-------------------|
| MIME 690 | (6) | Thesis Research 1 |
| MIME 691 | (3) | Thesis Research 2 |
| MIME 692 | (6) | Thesis Research 3 |
| MIME 693 | (3) | Thesis Research 4 |
| MIME 694 | (6) | Thesis Research 5 |
| MIME 695 | (3) | Thesis Research 6 |

**Required Seminar (6 credits)**

One of the following:

Note: MIME 672D1 and MIME 672D2 should be taken concurrently.

|            |     |                            |
|------------|-----|----------------------------|
| MIME 670   | (6) | Research Seminar 1         |
| MIME 672D1 | (3) | Rock Mechanics Seminar     |
| MIME 672D2 | (3) | Rock Mechanics Seminar     |
| MIME 673   | (6) | Mining Engineering Seminar |

**Required Courses (12 credits)**

Four 3-credit courses at the graduate level or the equivalent.

**11.6.7 Master of Engineering (M.Eng.); Mining and Materials Engineering (Non-Thesis) (45 credits)**

Students registered in this program specialize either in Mining Engineering or Materials Engineering.

**Research Project**

(6-15 credits)

|          |     |                               |
|----------|-----|-------------------------------|
| MIME 628 | (6) | Mineral Engineering Project 1 |
| MIME 629 | (6) | Mineral Engineering Project 2 |



MIME 634 (3) Mineral Engineering Project 3

### Required Courses (6 credits)

One of the following courses:

MIME 670 (6) Research Seminar 1  
 MIME 673 (6) Mining Engineering Seminar

### Complementary Courses

(24-33 credits)

12 credits of 500-, 600-, or 700-level MIME courses.

12 to 21 credits of 500-, 600-, or 700-level courses from within or, subject to Departmental approval, outside the Department.

## 11.6.8 Master of Engineering (M.Eng.); Mining and Materials Engineering (Non-Thesis) — Environmental Engineering (45 credits)

Students are strongly encouraged to consult with the Graduate Program Director prior to enrolling in this program.

### Research Project (6 credits)

MIME 628 (6) Mineral Engineering Project 1

### Required Courses (6 credits)

CHEE 591 (3) Environmental Bioremediation  
 CIVE 615 (3) Environmental Engineering Seminar

### Complementary Courses (22 credits)

(minimum 22 credits)

#### Data Analysis Course

One of the following courses:

AEMA 611 (3) Experimental Designs 1  
 CIVE 555 (3) Environmental Data Analysis  
 PSYC 650 (3) Advanced Statistics 1

#### Toxicology Course

One of the following courses:

OCCH 612 (3) Principles of Toxicology  
 OCCH 616 (3) Occupational Hygiene

#### Water Pollution Engineering Course

One of the following courses:

CIVE 651 (4) Theory: Water / Wastewater Treatment  
 CIVE 652 (4) Biological Treatment: Wastewaters  
 CIVE 660 (4) Chemical and Physical Treatment of Waters

**Air Pollution Engineering Course**

One of the following courses:

|          |     |                                  |
|----------|-----|----------------------------------|
| CHEE 592 | (3) | Industrial Air Pollution Control |
| MECH 534 | (3) | Air Pollution Engineering        |

**Soil and Water Quality Management Course**

One of the following courses:

|          |     |                          |
|----------|-----|--------------------------|
| BREE 533 | (3) | Water Quality Management |
| CIVE 686 | (4) | Site Remediation         |

**Environmental Impact Course**

One of the following courses:

|          |     |                                 |
|----------|-----|---------------------------------|
| GEOG 501 | (3) | Modelling Environmental Systems |
| GEOG 551 | (3) | Environmental Decisions         |

or an approved 500-, 600-, or 700-level alternative.

**Environmental Policy Course**

|          |     |                                   |
|----------|-----|-----------------------------------|
| URBP 506 | (3) | Environmental Policy and Planning |
|----------|-----|-----------------------------------|

or an approved 500-, 600-, or 700-level alternative.

**Elective Courses (11 credits)**

(minimum 11 credits)

Another project course and/or Engineering or non-Engineering 500-, 600-, or 700-level course subject to approval of the Department.

The relevant Project course in Mining and Materials Engineering is the following:

|          |     |                               |
|----------|-----|-------------------------------|
| MIME 629 | (6) | Mineral Engineering Project 2 |
|----------|-----|-------------------------------|

**11.6.9 Doctor of Philosophy (Ph.D.); Mining and Materials Engineering**

A candidate for this degree must pass a minimum of two courses assigned by the Department. These are selected on the basis of the student's previous academic training and research interests. The candidate is required to participate in an appropriate Research Seminar course and is expected to take a preliminary examination within the first year of his/her Ph.D. registration.

The candidate must submit an acceptable thesis based upon successfully completed research and must satisfy the examiners in an oral examination of the thesis.

**Thesis**

A thesis for the doctoral degree must constitute original scholarship and must be a distinct contribution to knowledge. It must show familiarity with previous work in the field and must demonstrate ability to plan and carry out research, organize results, and defend the approach and conclusions in a scholarly manner. The research presented must meet current standards of the discipline; as well, the thesis must clearly demonstrate how the research advances knowledge in the field. Finally, the thesis must be written in compliance with norms for academic and scholarly expression and for publication in the public domain.

**11.6.10 Graduate Diploma in Mining Engineering (30 credits)**

**Required Course (6 credits)**

|          |     |                            |
|----------|-----|----------------------------|
| MIME 673 | (6) | Mining Engineering Seminar |
|----------|-----|----------------------------|

**Complementary Courses (24 credits)**

24 credits selected in consultation with the Program Adviser.

## 11.7 Urban Planning

### 11.7.1 Location

School of Urban Planning  
Macdonald Harrington Building, Room 400  
815 Sherbrooke Street West  
Montreal, QC H3A 0C2  
Canada

Telephone: 514-398-4075

Fax: 514-398-8376

Email: [admissions.planning@mcgill.ca](mailto:admissions.planning@mcgill.ca)

Website: [www.mcgill.ca/urbanplanning](http://www.mcgill.ca/urbanplanning)

### 11.7.2 About Urban Planning

Urban planning is the process by which a community shapes its environment to meet its needs and reach its goals. It is also the profession of those who facilitate this process. The practice is as old as cities are; the profession itself is about a century old. In the late 19th and early 20th centuries, architects, landscape architects, engineers, government reformers, lawyers, public-health specialists, and others joined forces to tackle the serious social and environmental problems of the industrial city. They created new techniques and institutions to improve living conditions and decision-making processes.

Today, people who enter the profession come from diverse backgrounds as well, including the design professions; engineering and applied sciences; environmental and social studies; and other fields. Their challenge is to reinvent tools and procedures to meet new challenges and respond to new values. A key feature of planning education is learning to view issues in multidisciplinary ways, to manage processes of collaboration and of conflict, and to generate equitable and efficient solutions to complex problems of urban change and development.

McGill University was the first institution in Canada to offer a full-time planning program, starting in 1947. The School of Urban Planning was created in 1976 as a separate academic unit within the Faculty of Engineering. It shares a heritage building with the School of Architecture, right on the main open space of McGill's Downtown campus.

The primary objective of the School is to educate professional urban planners for leadership in the public, private, and not-for-profit sectors. It also prepares doctoral students for high-level research and teaching positions. The doctoral program is an *Ad hoc* program—in which students are subject to the University's regulations in terms of supervision and progress—that welcomes a small number of students, both local and international, who hold a master's degree and apply on the basis of their own research interests. Prospective applicants should consult the School's website.

The School's teaching and research activities, for both master's and Ph.D. students, pertain primarily to community planning; environmental policy and planning; international development planning; land-use planning and regulation; transportation and infrastructure planning; and urban design. These activities, which are conducted for the purpose of promoting better decision-making and improving human environments, often take place in partnership with other McGill departments (notably Architecture, Civil Engineering, Geography, and Law) and with units at other institutions in Montreal, across Canada, and abroad. The School uses Montreal and its region as its main teaching laboratory.

The School of Urban Planning has a strong track record of contributing to the community and to the profession. It works with civil society as well as with government to understand urban challenges and to formulate policies and plans to meet them. Community and professional partners are located in Montreal, in Québec, elsewhere in Canada, and in developing regions.

#### Master of Urban Planning (M.U.P.) Program

The Master of Urban Planning (M.U.P.) program is a two-year course of study that attracts students from Québec, Canada, the U.S., and overseas. It is recognized by the *Ordre des urbanistes du Québec* (OUQ) and the Canadian Institute of Planners (CIP). Graduates may become full members of the OUQ and other provincial planning associations by completing their respective internship and examination requirements. Similar requirements must be met for admission to the American Institute of Certified Planners (AICP) and other such organizations.

The M.U.P. program was designed with a strong emphasis on project-based learning, i.e., practical work done in teams, in a studio setting. Approximately half of the curriculum is devoted to required courses that teach basic knowledge and skills in urban planning; the other half enables students to select courses or research projects that match their particular interests. Three studio courses, a summer internship, and a semester-long Supervised Research Project prepare them for professional practice and research. Students participate actively in professors' research programs or define their own research objectives, sometimes with their own research funding from major agencies (e.g., SSHRC, NSERC, FQRSC, FQRNT).

The core program provides a general education in spatial planning in its functional, environmental, and social dimensions. A formal specialization is available in Transportation Planning. M.U.P. students in the core program may also participate in the Barbados Field Study Semester, which focuses on global environmental issues. Details concerning these concentrations are available at [www.tram.mcgill.ca](http://www.tram.mcgill.ca) and [www.mcgill.ca/bfss](http://www.mcgill.ca/bfss) respectively. Students wishing to specialize in Urban Design, as in other subfields of planning, can do so within the core program. A number of electives, the summer internship, and the Supervised Research Project together allow for over a year's worth of individual concentration on a particular topic.

Graduates of the M.U.P. program work as planners, designers, and policy analysts, as researchers, advocates, and mediators, and they do so at various levels of government, in civil-society organizations, and with private consulting firms. Although their area of expertise varies, they devote their efforts in increasing numbers to sustainable development in its environmental, social, and economic dimensions.

#### Ph.D. (*Ad Hoc*)

The Department of Urban Planning also offers the possibility of directly entering a Ph.D. program on an *ad hoc* basis, or, with the permission of the supervisor and the approval of the Graduate Program Director, exceptional students may transfer from the M.U.P. to the *ad hoc* Ph.D. program.

#### *section 11.7.5: Master of Urban Planning (M.U.P.); Urban Planning (Non-Thesis) (66 credits)*

The M.U.P. program requires two years of study, including a three-month internship in a professional setting. Upon completion of the program, graduates are expected to have acquired basic planning skills, a broad understanding of urban issues, and specialized knowledge in a field of their own choice.

#### *section 11.7.6: Master of Urban Planning (M.U.P.); Urban Planning (Non-Thesis) — Transportation Planning (66 credits)*

The Transportation Planning option enables students to specialize in this field as part of their course of study for the M.U.P. degree. Studio courses, an internship, and a final project involve real-life work that prepares students for the professional practice of Urban Transportation Planning.

#### *section 11.7.7: Master of Urban Planning (M.U.P.); Urban Planning (Non-Thesis) — Urban Design (66 credits)*



**Note:** The Urban Design option is being suspended. Students interested in Urban Design will be able to specialize in this field of practice as part of the core M.U.P. program.

The Urban Design option allows students to specialize in this field as part of their course of study for the M.U.P. degree. Studio courses, an internship, and a final project involve real-life work that prepares students for the professional practice of Urban Design.

### 11.7.3 Urban Planning Admission Requirements and Application Procedures

Revision, October 2012. Start of revision.

#### 11.7.3.1 Admission Requirements

The M.U.P. degree is open to students holding a bachelor's degree or equivalent in Anthropology, Architecture, Economics, Engineering, Environmental Studies, Geography, Law, Management, Political Science, Social Work, Sociology, or Urban Studies. Students from other backgrounds are considered for admission on an individual basis.

In addition to the documents for admission required by Graduate and Postdoctoral Studies, the following must be submitted:

1. Statement of specific interest in the area of Urban Planning (one to two pages)
2. Curriculum Vitae
3. Portfolio: For architects only, a portfolio containing at least five (5) examples of architectural work accomplished in school and in practice demonstrating creativity and imagination. All applicants interested in the urban design concentration may wish to submit such a portfolio. Portfolios are not to exceed 8½" x 11" in size.
4. Applicants to graduate studies whose mother tongue is not English, and who have not completed an undergraduate or graduate degree from a recognized foreign institution where English is the language of instruction or from a recognized Canadian institution (anglophone or francophone), must submit documented proof of competency in oral and written English. By the Dates for Guaranteed Consideration, appropriate exam results must be submitted directly from the TOEFL (Test of English as a Foreign Language) or IELTS (International English Language Testing Systems) Office. The minimum requirement for the TOEFL test is as follows: PBT – 600, iBT – 100, with each component score not less than 23. The minimum score for the IELTS test is 7.0.

#### 11.7.3.2 Application Procedures

McGill's online application form for graduate program candidates is available at [www.mcgill.ca/gradapplicants/apply](http://www.mcgill.ca/gradapplicants/apply).

See *section 6.3: Application Procedures (for All Admissions Starting Summer 2013)* for detailed application procedures.

#### 11.7.3.2.1 Additional Requirements

The items and clarifications below are additional requirements set by this department:

- Personal Statement (one to two pages)
- Curriculum Vitae
- Portfolio: For architects only, at least five (5) examples of architectural work accomplished in school and in practice demonstrating creativity and imagination. All applicants interested in the urban design concentration may wish to submit such a portfolio. Portfolios are not to exceed 8½" x 11" in size.

#### Awards and Financial Assistance

The School offers several fellowships and supports student applications to external grants from provincial and federal agencies. For information regarding awards and financial assistance, please refer to the *Graduate Fellowships and Awards Calendar* available at [www.mcgill.ca/students/courses/calendars](http://www.mcgill.ca/students/courses/calendars).

### 11.7.3.3 Dates for Guaranteed Consideration

| Canadian      | International | Special/Exchange/Visiting |
|---------------|---------------|---------------------------|
| Fall: Jan. 15 | Fall: Jan. 15 | Fall: Jan. 15             |
| Winter: N/A   | Winter: N/A   | Winter: N/A               |
| Summer: N/A   | Summer: N/A   | Summer: N/A               |

Revision, October 2012. End of revision.

### 11.7.4 Urban Planning Faculty

#### Director

Raphaël Fischler

#### Emeritus Professors

David Farley; B.Arch.(McG.), M.Arch., M.C.P.(Harv.)

Jane Matthews-Glenn; B.A., LL.B.(Qu.), D. en droit(Stras.)

#### Associate Professors

Madhav G. Badami; B.Tech., M.S.(IIT, Madras) M.E.Des.(Calg.), Ph.D.(Br. Col.) (*joint appt. with McGill School of Environment*)

Lisa Bornstein; B.Sc.(Calif., Berk.), M.R.P.(C'nell), Ph.D.(Calif., Berk.)

David F. Brown; B.A.(Bishop's), M.U.P.(McG.), Ph.D.(Sheff.)

Raphaël Fischler; B.Eng.(Eindhoven), M.Sc., M.C.P.(MIT), Ph.D.(Calif., Berk.)

#### Assistant Professors

Ahmed Elgeneidy; B.A.A., M.Arch.(Alexandria), Ph.D.(Port. St.)

Nik Luka; B.A.A.(Ryerson), M.Arch.(Laval), Ph.D.(Tor.) (*joint appt. with School of Architecture*)

#### Adjunct Professors

Cameron Charlebois; B.Sc.(Arch.), B.Arch., M.B.A.(McG.)

Murtaza Haider; B.Sc.(NWFP UET-Pesh.), M.A.Sc., Ph.D.(Tor.)

Marc-André Lechasseur; LL.B.(Sher.), LL.M.(Montr.)

Mario Polèse; B.A.(CUNY), M.A., Ph.D.(Penn.)

Richard Shearmur; B.A.(Camb.), M.U.P.(McG.), Ph.D.(Montr.)

Ray Tomalty; B.A., M.P.A.(Qu.), Ph.D.(Wat.)

Alain Trudeau; B.Sc.(UQAM), M.U.P.(McG.)

#### Guest Lecturers

Heather Braiden, Paul LeCavalier, Denis Lévesque, James McGregor, Pierre Morissette, Larry Sherman, Martin Wexler

### 11.7.5 Master of Urban Planning (M.U.P.); Urban Planning (Non-Thesis) (66 credits)

The M.U.P. requires two years of study including a three-month internship with a member of a recognized planning association.

#### Research Project (15 credits)

URBP 630 (3) Supervised Research Project 1

|          |     |                               |
|----------|-----|-------------------------------|
| URBP 631 | (6) | Supervised Research Project 2 |
| URBP 632 | (6) | Supervised Research Project 3 |

**Required Courses (27 credits)**

|          |     |                                |
|----------|-----|--------------------------------|
| URBP 609 | (3) | Planning Graphics              |
| URBP 612 | (3) | History and Theory of Planning |
| URBP 622 | (6) | Planning Studio 1              |
| URBP 623 | (3) | Planning Studio 2              |
| URBP 624 | (6) | Planning Studio 3              |
| URBP 633 | (3) | Planning Methods               |
| URBP 635 | (3) | Planning Law                   |

**Required Internship (6 credits)**

|          |     |                      |
|----------|-----|----------------------|
| URBP 628 | (6) | Practical Experience |
|----------|-----|----------------------|

**Complementary Courses**

12-18 credits

In choosing courses from the following list, students are encouraged to complete at least one course in each of the four areas of design, environment, housing, and transportation.

|           |     |   |
|-----------|-----|---|
| ARCH 515  | (3) | Sustainable Design                        |
| ARCH 520  | (3) | Montreal: Urban Morphology                |
| ARCH 521  | (3) | Structure of Cities                       |
| ARCH 527  | (3) | Civic Design                              |
| ARCH 528  | (3) | History of Housing                        |
| ARCH 529  | (3) | Housing Theory                            |
| CIVE 540  | (3) | Urban Transportation Planning             |
| CIVE 561  | (3) | Urban Activity, Air Pollution, and Health |
| URBP 501  | (2) | Principles and Practice 1                 |
| URBP 504  | (3) | Planning for Active Transportation        |
| URBP 505  | (3) | Geographic Information Systems            |
| URBP 506  | (3) | Environmental Policy and Planning         |
| URBP 507* | (3) | Planning and Infrastructure               |
| URBP 519* | (6) | Sustainable Development Plans             |
| URBP 520* | (3) | Globalization: Planning and Change        |
| URBP 530  | (3) | Urban Environmental Planning              |
| URBP 536  | (1) | Transportation Seminar 1                  |
| URBP 537  | (1) | Transportation Seminar 2                  |
| URBP 538  | (1) | Transportation Seminar 3                  |
| URBP 602  | (3) | Urban Design Seminar 1: Foundations       |
| URBP 607  | (3) | Reading Course: Urban Planning            |
| URBP 608  | (3) | Advanced GIS Applications                 |
| URBP 616  | (3) | Selected Topics 1                         |

|           |     |                                      |
|-----------|-----|--------------------------------------|
| URBP 617  | (3) | Selected Topics 2                    |
| URBP 618  | (3) | Selected Topics 3                    |
| URBP 619  | (3) | Land Use and Transportation Planning |
| URBP 620  | (3) | Transportation Economics             |
| URBP 625  | (2) | Principles and Practice 2            |
| URBP 626  | (2) | Principles and Practice 3            |
| URBP 629  | (3) | Cities in a Globalizing World        |
| URBP 634* | (3) | Planning Water Resources in Barbados |
| URBP 651  | (3) | Redesigning Suburban Space           |

\* Courses open only to students enrolled in the Barbados Field Study Semester.

Students may elect to complete a Field Study Semester in Barbados during the Fall term of their second year in the program. With this option, URBP 519 is substituted for URBP 624. Coursework must include URBP 507, URBP 520, and URBP 634. All other requirements for the M.U.P. degree apply.

### Elective Courses

0-6 credits

Students may take courses at the 500 or 600 levels offered by any academic unit at McGill or at another Montreal university if they help students develop an in-depth knowledge of one or more subject areas in the field of planning, with the approval of the School. Frequent choices include courses in real-estate analysis, urban geography, sociology, anthropology, law, politics, and environmental science. Students must confirm prior to registration that the elective course(s) will be counted toward the M.U.P. degree.

## 11.7.6 Master of Urban Planning (M.U.P.); Urban Planning (Non-Thesis) — Transportation Planning (66 credits)

The Transportation Planning Option enables students to specialize in this field as part of their course of study for the Master of Urban Planning degree (M.U.P.). Studio courses, an internship, and a final project involve real-life work that prepares students for the professional practice of urban transportation planning.

### Research Project (15 credits)

|          |     |                               |
|----------|-----|-------------------------------|
| URBP 630 | (3) | Supervised Research Project 1 |
| URBP 631 | (6) | Supervised Research Project 2 |
| URBP 632 | (6) | Supervised Research Project 3 |

### Required Internship (6 credits)

|          |     |                      |
|----------|-----|----------------------|
| URBP 628 | (6) | Practical Experience |
|----------|-----|----------------------|

### Required Courses (33 credits)

|          |     |                                      |
|----------|-----|--------------------------------------|
| URBP 505 | (3) | Geographic Information Systems       |
| URBP 609 | (3) | Planning Graphics                    |
| URBP 612 | (3) | History and Theory of Planning       |
| URBP 619 | (3) | Land Use and Transportation Planning |
| URBP 622 | (6) | Planning Studio 1                    |
| URBP 623 | (3) | Planning Studio 2                    |
| URBP 624 | (6) | Planning Studio 3                    |
| URBP 633 | (3) | Planning Methods                     |
| URBP 635 | (3) | Planning Law                         |

### Complementary Courses

6-12 credits from the following:

|          |     |  |
|----------|-----|--|
| CIVE 540 | (3) | Urban Transportation Planning              |
| CIVE 561 | (3) | Urban Activity, Air Pollution, and Health  |
| CIVE 637 | (4) | Discrete Choice Modeling in Transportation |
| URBP 504 | (3) | Planning for Active Transportation         |
| URBP 506 | (3) | Environmental Policy and Planning          |
| URBP 536 | (1) | Transportation Seminar 1                   |
| URBP 537 | (1) | Transportation Seminar 2                   |
| URBP 538 | (1) | Transportation Seminar 3                   |
| URBP 608 | (3) | Advanced GIS Applications                  |
| URBP 620 | (3) | Transportation Economics                   |

### Elective Courses

0-6 credits

Students may take courses at the 500 or 600 level offered by any academic unit at McGill or another Montreal university if they help students develop an in-depth knowledge of one or more subject areas in the field of planning, with the approval of the School. Frequent choices include courses in real-estate analysis, urban geography, sociology, anthropology, law, politics, and environmental science. Students must confirm prior to registration that the elective course(s) will be counted toward the M.U.P. degree.

### 11.7.7 Master of Urban Planning (M.U.P.); Urban Planning (Non-Thesis) — Urban Design (66 credits)

The Urban Design concentration in the professionally-accredited M.U.P. degree enables students to specialize in this area of scholarship and professional practice in their second year of studies. Three studio courses, an internship, two intensive seminar courses, and a final Supervised Research Project in Urban Design enable students to prepare for professional practice as urban design specialists skilled in analysis and design development for existing (sub)urban landscapes and newly urbanizing contexts. This option is open to students with a professional and/or undergraduate degree in Architecture, Landscape Architecture, Environmental Design, Urban Planning, or related fields. Qualified applicants are admitted to the core M.U.P. program and then apply to be placed in the concentration at the end of their first year of study. Successful applicants must meet the admission requirements for the core M.U.P. program and also demonstrate visual acuity, spatial literacy, and skills in graphic communication during their first two terms of study.

#### Research Project (15 credits)

|          |     |                               |
|----------|-----|-------------------------------|
| URBP 630 | (3) | Supervised Research Project 1 |
| URBP 631 | (6) | Supervised Research Project 2 |
| URBP 632 | (6) | Supervised Research Project 3 |

#### Required Internship (6 credits)

|          |     |                      |
|----------|-----|----------------------|
| URBP 628 | (6) | Practical Experience |
|----------|-----|----------------------|

#### Required Courses (33 credits)

|          |     |   |
|----------|-----|---|
| URBP 602 | (3) | Urban Design Seminar 1: Foundations     |
| URBP 604 | (3) | Urban Design Seminar 2: Advanced Topics |
| URBP 609 | (3) | Planning Graphics                       |
| URBP 612 | (3) | History and Theory of Planning          |
| URBP 622 | (6) | Planning Studio 1                       |
| URBP 623 | (3) | Planning Studio 2                       |
| URBP 624 | (6) | Planning Studio 3                       |
| URBP 633 | (3) | Planning Methods                        |
| URBP 635 | (3) | Planning Law                            |



**Complementary Courses**

9-12 credits from the following including at least one ARCH course and one URBP course:

|          |     |                                      |
|----------|-----|--------------------------------------|
| ARCH 515 | (3) | Sustainable Design                   |
| ARCH 520 | (3) | Montreal: Urban Morphology           |
| ARCH 521 | (3) | Structure of Cities                  |
| ARCH 527 | (3) | Civic Design                         |
| ARCH 561 | (3) | Affordable Housing Seminar 1         |
| ARCH 562 | (3) | Affordable Housing Seminar 2         |
| ARCH 566 | (3) | Cultural Landscapes Seminar          |
| URBP 504 | (3) | Planning for Active Transportation   |
| URBP 506 | (3) | Environmental Policy and Planning    |
| URBP 530 | (3) | Urban Environmental Planning         |
| URBP 616 | (3) | Selected Topics 1                    |
| URBP 619 | (3) | Land Use and Transportation Planning |

0-3 credits can be selected from other courses at the 500 or 600 levels in any academic unit at McGill or at another university, subject to the approval of the School.

|          |     |                                      |
|----------|-----|--------------------------------------|
| ARCH 515 | (3) | Sustainable Design                   |
| ARCH 528 | (3) | History of Housing                   |
| ARCH 529 | (3) | Housing Theory                       |
| ARCH 550 | (3) | Urban Planning and Development       |
| URBP 501 | (2) | Principles and Practice 1            |
| URBP 505 | (3) | Geographic Information Systems       |
| URBP 530 | (3) | Urban Environmental Planning         |
| URBP 607 | (3) | Reading Course: Urban Planning       |
| URBP 617 | (3) | Selected Topics 2                    |
| URBP 618 | (3) | Selected Topics 3                    |
| URBP 619 | (3) | Land Use and Transportation Planning |
| URBP 625 | (2) | Principles and Practice 2            |
| URBP 626 | (2) | Principles and Practice 3            |
| URBP 629 | (3) | Cities in a Globalizing World        |

