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This publication provides guidance to prospects, applicants, students, faculty and staff.

**1 .** McGill University reserves the right to mak

## ***Publication Information***

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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.





Degree		Prerequisites
Master of Business Administration	M.B.A.	Post-professional degree – an M.Arch. (professional degree) or equivalent professional degree.
Master of Business Administration with integrated Bachelor of Civil Law / Bachelor of Laws	M.B.A. with B.C.L./LL.B.	An undergraduate degree from an approved university. See : <a href="#">M.B.A. Program</a> . See : <a href="#">M.B.A. Program</a> .
	M.B.A. with M.D.	See : <a href="#">M.B.A. Program</a> .

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) Gender and Women's Studies, Jewish Education (Non-Thesis)
Educational Leadership	Thesis, Non-Thesis (Coursework), Non-Thesis (Project)	Gender and Women's Studies (Thesis) 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) 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) 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) 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) 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



<b>Program Areas</b>	<b>Thesis/Non-Thesis</b>	<b>Options</b>
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) Environmental Assessment (Non-Thesis)

**Master of Science, A**



Programs leading to the de

<b>Program</b>	<b>Options</b>	<b>Offered by Faculty/School</b>
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







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.



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.

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### 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**

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## 6.4 Admission Tests

Revision, October 2012. Start of re vision.

### **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 re vision.

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## 6.5 Competency in English

Applicants to graduate studies must demonstrate an adequate level of proficiency

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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 622 711.622 T7uh a degr





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;

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## 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.”

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## 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

- Guidelines and Regulations for Academic Units on Graduate Student Advising and Supervision



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 intensiv

*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 b



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, Sev

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

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

Sustainable Residential Dev

Research Project (15 credits)

ARCH 624	(15)	History and Theory Project
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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
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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.



## 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

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 ener

### 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. Re

**Assistant Professors**

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

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: 1 221.949 646.702 Tm (Project in Chemical Ee.5678i0 0 1 67.52 1 221.949 646.702 TmTm (vir)Tj 1 023002 449 646.702 Tm T

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 de





### 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. Selv



Complementary Courses (17 credits)

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

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.

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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 e

*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.

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 Pr**

## 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 Popo



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





## 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; adaptive 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)*



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.

## **Emeritus Professors**

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

D.F. Mateescu; M.Eng.(Poli. U. Buch.), Ph.D.(Rom.

### 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, 692, 693, and 694 must be taken in the first term of the student's program.

##### Required Courses

1 credit:

MECH 609	(1)	Seminar
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##### 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
		M.Eng. Thesis Progress Report 2 224.52s or 700 level



**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

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.

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

1. Aeronautics and Space Engineering
2. Avionics and Control

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 advork in . Fute (actorily)Tj12TG9.g

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)*

### *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](#)

### **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.)

Master of Engineering (M.Eng.);

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 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
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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
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### 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 know

24 credits selected in consultation with the Program Adviser.

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## 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

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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,

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 de



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
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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

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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)

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### 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

