ABOUT THIS CALENDAR

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McGill University
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Canada

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McGill University reserves the right to make changes to the information contained in this publication – including correcting errors, altering fees, schedules of admission and credit requirements, and revising or cancelling particular courses or programs – without prior notification.

Not all courses are offered every year and changes can be made after this Calendar is published. Always check the Class Schedule link at www.mcgill.ca/courses for the most up-to-date information on whether a course is offered.

Note: Throughout the text, “you” refers to students newly admitted, readmitted or returning to McGill.

Published in Canada

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Lai Yard Lee
Enrolment Services

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Important Information, Regulations and Policies
It is the responsibility of all graduate students to be aware of rules and regulations contained in this Calendar. In particular, attention is drawn to:

Deadlines, as indicated in the Important Dates 2009-2010, page 5.

Reinstatement and Admission of Former Students, page 21.

Time Limitation, page 25.
Dean’s Welcome

To Graduate Students and Postdoctoral Fellows:

I am extremely pleased to welcome you to McGill University. With over 250 Doctoral and Master's degree programs, McGill is committed to providing world-class graduate education and postdoctoral training in a full range of academic disciplines and professions. Graduate and Postdoctoral Studies (GPS) works in collaboration with the Faculties and other administrative and academic units to deliver the very highest level of teaching and research across the University. GPS is responsible for the admission and registration of graduate students, disbursing graduate fellowships, supporting postdoctoral fellows, and facilitating the graduation process, including the examination of theses.

As a student-centered research institution, McGill 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 central administration, Faculties, graduate students, professors, researchers, postdoctoral fellows, and staff to enhance the graduate and postdoctoral experience and provide a supportive, stimulating, and enriching academic environment.

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

1.3 General Statement Concerning Higher Degrees

Graduate and Postdoctoral Studies (GPS) administers all programs leading to graduate diplomas, certificates and higher degrees. It is responsible for the admission of candidates, the supervision of their work and for recommending to Senate those who may receive the degrees, diplomas and certificates.

2 Important Dates 2009-2010

Given in this section are the Graduate and Postdoctoral Studies key dates.

The following Important Dates (formerly known as the Calendar of Dates) are accurate as of February 1, 2009. The information is subject to change and you are advised to verify the Important Dates website at www.mcgill.ca/importantdates.

LEGENDS

GPS Graduate and Postdoctoral Studies

Activity Codes:

APP Application
APPPRGRD Apply to graduate on Minerva
AWRD Awards (including scholarships)
CONV Convocation
DEF Deferred - application and examination
EXAM Examinations
EXCH Exchange and Study Abroad Deadlines
EVENT Event - reunion, carnival, presentation, etc.
FORM Forms
HOLIDAY Holiday
IDCARD ID Card
INFO Information
LEC Lecture
NOTE Note to students
ORIENT Orientation
REG Registration
SUPP Supplemental - application and examination
THES Thesis
W Course withdrawal
W-- University withdrawal

DATE ACTIVITY CODE ACTIVITY

December 2008

APP Beginning of application period for eligibility for guaranteed consideration for admission in September to departments in Graduate Studies. Please verify these dates with individual departments or on the web at www.mcgill.ca/gradapplicants/programs.)

March 2009

EXCH Deadline for incoming exchange applications at the graduate level Fall term (September) and Winter term (January) start. (Many departments have earlier deadlines. Please verify with individual departments or at www.mcgill.ca/gradapplicants/apply.)
<table>
<thead>
<tr>
<th>DATE</th>
<th>ACTIVITY CODE</th>
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<tbody>
<tr>
<td>Mar. 4, 2009, Wed.</td>
<td>APPGRAD</td>
<td>Deadline to apply to graduate on Minerva for all Undergraduate students and Graduate students in all non-thesis programs (certificates, diplomas, master’s non-thesis) who expect to complete their program requirements at the end of the Winter 2009 term (Spring 2009 convocation).</td>
</tr>
<tr>
<td>Mar. 17, 2009, Tues.</td>
<td>REG</td>
<td>Summer registration opens for Graduate students. Students should confirm dates with individual departments.</td>
</tr>
<tr>
<td>Mar. 17, 2009, Tues.</td>
<td>NOTE</td>
<td>Class schedule on Minerva is available for Fall 2009 and Winter 2010 registration.</td>
</tr>
<tr>
<td>Mar. 30, 2009, Mon.</td>
<td>APPGRAD</td>
<td>Deadline for all Undergraduate students and Graduate students in all non-thesis programs (certificates, diplomas, master’s non-thesis) who expect to complete their program requirements at the end of the Summer 2009 term (Fall 2009 convocation) to apply to graduate on Minerva.</td>
</tr>
<tr>
<td>Mar. 31, 2009, Tues.</td>
<td>REG</td>
<td>Registration for Fall 2009 and Winter 2010 using Minerva begins for all students entering the graduating (U3/U4) year of their program (excluding Law and courses offered by the Desautels Faculty of Management, except as noted below), and all students in Graduate degree programs, except for Continuing Education.</td>
</tr>
<tr>
<td>Apr. 10, 2009, Fri. to Apr. 13, 2009, Mon.</td>
<td>HOLIDAY</td>
<td>EASTER. No classes or exams. Administrative offices closed. Library hours to be announced.</td>
</tr>
<tr>
<td>Apr. 14, 2009, Tues.</td>
<td>INFO</td>
<td>Last day for the Winter 2009 term for students to request fee exemptions and to submit legal documents for proof of Canadian citizenship and proof of Quebec residency to the Enrolment Services Office. Students in Continuing Education should submit their documents directly to the Centre for Continuing Education. Documents received after this date will be updated for the following term only.</td>
</tr>
<tr>
<td>May 15, 2009, Fri.</td>
<td>W--</td>
<td>Deadline for web withdrawing (grade of &quot;W&quot;) from multi-term courses (D1/D2, N1/N2) that started in the Winter 2009 term and end in the Summer or Fall 2009 term (with fee refund for Summer term) for students in Agricultural and Environmental Sciences, Arts, Continuing Education, Education, Engineering including Architecture, Graduate Studies, Law, Management, Music, Nursing, Physical and Occupational Therapy, Religious Studies, Social Work, and Science (No withdrawals from Education Intensive courses). Students in multi-term courses with course numbers ending in N1 and N2 only (started in the Winter, skip the Summer, are completed in the subsequent Fall term) may withdraw on Minerva until May 15 and following May 15 until the end of the Fall term course change period on September 15 (with full fee refund for the Fall term) by contacting their faculty Student Affairs Office.</td>
</tr>
<tr>
<td>May 18, 2009, Mon.</td>
<td>HOLIDAY</td>
<td>VICTORIA DAY. (Classes cancelled). Administrative offices closed.</td>
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<tr>
<td>May 20, 2009, Wed. <em>(Tentative)</em></td>
<td>EVENT</td>
<td>Senate Steering Meeting to approve degrees granted at Spring 2009 Convocations.</td>
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<tr>
<td>May 22, 2009, Fri.</td>
<td>CONV</td>
<td>14:30 Faculty of Agricultural and Environmental Sciences</td>
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<td>NOTE</td>
<td>For additional information regarding Convocation, please consult <a href="http://www.mcgill.ca/convocation">www.mcgill.ca/convocation</a>.</td>
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<tr>
<td>May 25, 2009, Mon.</td>
<td>CONV</td>
<td>10:00 Faculty of Science “A” and students with a degree in Arts &amp; Science</td>
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<td>18:00 Centre for Continuing Education</td>
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<tr>
<td>May 26, 2009, Tues.</td>
<td>CONV</td>
<td>10:00 Faculty of Engineering and 14:00 Health Sciences</td>
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<td>(Faculties of Medicine and Dentistry as well as the School of Nursing and the School of Physical</td>
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<td>and Occupational Therapy)</td>
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<tr>
<td>May 27, 2009, Wed.</td>
<td>CONV</td>
<td>10:00 Faculty of Education and 14:00 Desautels Faculty of Management</td>
</tr>
<tr>
<td>May 28, 2009, Thurs.</td>
<td>CONV</td>
<td>10:00 Faculty of Arts “A” and Faculty of Religious Studies</td>
</tr>
<tr>
<td>May 29, 2009, Fri.</td>
<td>CONV</td>
<td>10:00 Faculty of Law and 14:00 Schulich School of Music</td>
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<tr>
<td>June 2009</td>
<td>THES</td>
<td>Deadline to submit Doctoral theses with Nomination of Examiners forms to GPS (Thesis Office)</td>
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<tr>
<td>June 1, 2009, Mon.</td>
<td>THES</td>
<td>for students expecting to convocate in Fall 2009. Meeting this deadline does not guarantee a</td>
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<td>Fall graduation.</td>
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<tr>
<td>June 15, 2009, Mon.</td>
<td>THES</td>
<td>Deadline to submit master’s theses with Nomination of Examiners forms to GPS (Thesis Office)</td>
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<td>for students expecting to convocate in Fall 2009. Meeting this deadline does not guarantee a</td>
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<td>Fall graduation.</td>
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<tr>
<td>June 30, 2009, Tues.</td>
<td>APP</td>
<td>End of application period for eligibility for guaranteed consideration for admission in</td>
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<td>September to departments in Graduate Studies. Please verify these dates with individual</td>
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<td>departments or on the web at <a href="http://www.mcgill.ca/gradapplicants/programs">www.mcgill.ca/gradapplicants/programs</a>.)</td>
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<tr>
<td>July 2009</td>
<td>HOLIDAY</td>
<td>CANADA DAY. (Classes cancelled). Administrative offices closed.</td>
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<tr>
<td>July 14, 2009, Tues. to Sept. 1, 2009, Tues.</td>
<td>REG</td>
<td>Registration using Minerva for all newly-admitted students in Graduate Studies.</td>
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<tr>
<td>July 27, 2009, Mon.</td>
<td>REG</td>
<td>Last day for returning students in all faculties (except Continuing Education) to register</td>
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<td>without a late registration fee.</td>
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<tr>
<td>July 28, 2009, Tues. to Sept. 1, 2009, Tues.</td>
<td>REG</td>
<td>Late registration and course change on Minerva for returning students in all faculties (except</td>
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<td>Continuing Education) with a $50 late registration fee ($20 for Special Students and</td>
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<td>Graduate part-time students).</td>
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<td>July 28, 2009, Tues. to Aug. 18, 2009, Tues.</td>
<td>IDCARD</td>
<td>Canadian students can avoid line-ups and get their ID cards early once they have registered.</td>
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<td>Visit Enrolment Services, James Administration Building, Room 205, from July 28 to August 18.</td>
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<td>Office hours are Monday to Thursday 9:00 a.m. to 5:00 p.m. and Fridays 10:00 a.m. to 5:00 p.m.</td>
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<tr>
<td>July 28, 2009, Tues. to Aug. 21, 2009, Fri.</td>
<td>IDCARD</td>
<td>New students can avoid line-ups and get their ID cards once they have registered. Go to</td>
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<td>Laird Hall, Room 106, from Monday to Thursday 9:00 a.m. to 3:30 p.m., and Friday from 9:00 a.m.</td>
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<td>to 12:00 p.m. Alternatively, they can sign up to get their ID Card during Orientation Week at</td>
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<tr>
<td>Aug. 15, 2009, Sat.</td>
<td>INFO</td>
<td>Last day for students to request fee exemptions and to submit legal documents for proof of</td>
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<td>Canadian citizenship and proof of Quebec residency to the Enrolment Services Office for the</td>
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<td>Summer 2009 term. Students in Continuing Education should submit their documents directly to</td>
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<td>the Centre for Continuing Education. Documents received after this date will be updated for the</td>
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<td>following term only.</td>
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| Aug. 15, 2009, Sat. | REG         | Registration via Minerva in Fall term Continuing Education courses begins.}
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<tr>
<th>Date</th>
<th>Activity Code</th>
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<tr>
<td>Aug. 19, 2009, Wed. to Aug. 28, 2009, Fri.</td>
<td>IDCARD</td>
<td>IDs at the Trottier Building Cafeteria from 9:00 a.m. to 5:00 p.m. including Saturday, August 22 and Sunday, August 23.</td>
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<tr>
<td>Aug. 24, 2009, Mon. to Aug. 28, 2009, Fri.</td>
<td>ORIENT</td>
<td>Orientation Week</td>
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<tr>
<td>Aug. 24, 2009, Mon. to Aug. 28, 2009, Fri.</td>
<td>ORIENT</td>
<td>“Discover Mac” – Faculty Orientation for all new students in the Faculty of Agricultural and Environmental Sciences. Refer to orientation schedule and website <a href="http://www.mcgill.ca/macdonald/orientation">www.mcgill.ca/macdonald/orientation</a> for details.</td>
</tr>
<tr>
<td>Aug. 24, 2009, Mon. to Sept. 11, 2009, Fri.</td>
<td>ORIENT</td>
<td>Orientation Resource Centre operates daily (9:00 a.m. to 5:00 p.m.), Brown Student Services Building, 2nd floor, 3600 McTavish Street (closed weekends and Labour Day).</td>
</tr>
<tr>
<td>Aug. 24, 2009, Mon. to Sept. 15, 2009, Tues.</td>
<td>ORIENT</td>
<td>First-Year Resource Room operates daily (9:00 a.m. to 5:00 p.m.), Brown Student Services Building, Room 2100, 3600 McTavish Street (closed weekends and Labour Day). Computers and telephones are available for course registration.</td>
</tr>
<tr>
<td>Aug. 28, 2009, Fri.</td>
<td>REG</td>
<td>Deadline for cancellation of registration for the Fall term except Continuing Education. (Deposit is non-refundable for new students.)</td>
</tr>
</tbody>
</table>

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<thead>
<tr>
<th>Date</th>
<th>Activity Code</th>
<th>Activity</th>
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</thead>
<tbody>
<tr>
<td>Aug. 31, 2009, Mon.</td>
<td>THES</td>
<td>Registered students in 2008-2009 who have completed the residency in a thesis program and who submit their theses to GPS (Thesis Office) on or before this date are not required to register for the 2009-2010 academic year. Students who have already registered for the year must ask Graduate and Postdoctoral Studies, in writing, to delete their registration. Refer to the &quot;Request to Cancel Graduating Program Registration&quot; form on the web at <a href="http://www.mcgill.cagps/students/dates">www.mcgill.cagps/students/dates</a>. Students should not expect to graduate in Fall 2009, but must graduate by Fall 2010 (at the latest), otherwise, they must be reinstated and will be charged retroactive registration fees for all unregistered sessions up to and including the term in which they graduate.</td>
</tr>
</tbody>
</table>

**September 2009**

<table>
<thead>
<tr>
<th>Date</th>
<th>Activity Code</th>
<th>Activity</th>
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</thead>
<tbody>
<tr>
<td>Sept. 1, 2009, Tues.</td>
<td>REG</td>
<td>Deadline for new students to register without a late registration fee for all faculties and for returning students to register with a $50 late fee ($20 for Special Students and Graduate part-time students).</td>
</tr>
<tr>
<td>Sept. 1, 2009, Tues.</td>
<td>LEC</td>
<td>Lectures begin. The normal Thursday schedule of course activities will be cancelled for December 3, 2009. In its place, all lectures, labs, conferences and other course-related activities that are normally held on Monday will be held on Thursday, December 3, 2009 as well. This change in schedule is to make up for activities that will be cancelled on Monday, October 12 due to Thanksgiving Day.</td>
</tr>
<tr>
<td>DATE</td>
<td>ACTIVITY CODE</td>
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</tr>
<tr>
<td>Sept. 1, 2009, Tues.</td>
<td>AWRD</td>
<td>Start of external and internal graduate fellowship competitions for 2010-2011 funding. Graduate and final-year undergraduate students should enquire in their department and on the fellowships website at <a href="http://www.mcgill.ca/gps">www.mcgill.ca/gps</a> regarding information session schedules and application procedures and deadlines.</td>
</tr>
<tr>
<td>Sept. 2, 2009, Wed.</td>
<td>ORIENT</td>
<td>Discover McGill's Graduate Orientation Open House &amp; Welcome event will take place on Wednesday, September 2, 2009 between 4:00 and 8:00 p.m. It will be hosted in Thomson House, 3650 McTavish Street. Visit these websites for more information: <a href="http://www.mcgill.ca/firstyear/orientation1/graduate">www.mcgill.ca/firstyear/orientation1/graduate</a>; <a href="http://www.mcgill.ca/gradapplicants/events">www.mcgill.ca/gradapplicants/events</a>.</td>
</tr>
<tr>
<td>Sept. 2, 2009, Wed. to Sept. 15, 2009, Tues.</td>
<td>REG</td>
<td>Late registration period with $100 late registration fee for all faculties; $40 for Special Students and Graduate part-time students ($25 late registration fee for Continuing Education students).</td>
</tr>
<tr>
<td>Sept. 3, 2009, Thurs.</td>
<td>ORIENT</td>
<td>University Orientation, an important information session for new postdoctoral scholars in Thomson House, 3650 McTavish Street, from 17:00-18:00. Visit these websites for more information: <a href="http://www.mcgill.ca/firstyear/orientation">www.mcgill.ca/firstyear/orientation</a>; <a href="http://www.mcgill.ca/gradapplicants/events">www.mcgill.ca/gradapplicants/events</a>.</td>
</tr>
<tr>
<td>Sept. 15, 2009, Tues.</td>
<td>W</td>
<td>Deadline for web withdrawing (grade of &quot;W&quot;) from multi-term courses (D1/D2, N1/N2) that started in Summer 2009 (with fee refund for the Fall 2009 term). Please note that students in multi-term courses with course numbers ending in N1 and N2 only (started in the Winter, skip the Summer, are completed in the subsequent Fall term) may withdraw on Minerva until May 15 and following May 15 until the end of the Fall term course change period on September 15 (with full fee refund for the Fall term) by contacting their faculty Student Affairs Office.</td>
</tr>
<tr>
<td>Sept. 15, 2009, Tues.</td>
<td>REG</td>
<td>Course Change (drop/add) deadline for Fall term and first part of multi-term courses starting in September 2009.</td>
</tr>
<tr>
<td>Sept. 18, 2009, Fri.</td>
<td>AWRD</td>
<td>Returning master's and doctoral level students should enquire of their departments or the GPS (Graduate Fellowships and Awards) regarding precise deadlines for internal and external fellowship competitions; important deadlines normally fall during the months of October and November.</td>
</tr>
<tr>
<td>Sept. 20, 2009, Sun.</td>
<td>W/W--</td>
<td>Deadline to web withdraw (grade of &quot;W&quot;) or University Withdrawal (grade of &quot;W--&quot;) with full fee refund (less $100 minimum charge for readmitted students; less deposit or $100 minimum charge for new students, in case of complete withdrawal from the University).</td>
</tr>
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</table>

**October 2009**

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<thead>
<tr>
<th>DATE</th>
<th>EVENT</th>
<th>ACTIVITY</th>
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</thead>
<tbody>
<tr>
<td>TBA</td>
<td>EVENT</td>
<td>Senate Steering Meeting to approve degrees granted at Fall 2009 Convocations.</td>
</tr>
<tr>
<td>Oct. 5, 2009, Mon.</td>
<td>THES</td>
<td>Deadline for submission of doctoral theses with Nomination of Examiners forms to GPS (Thesis Office) for students expecting to graduate in February 2010. Meeting this deadline does not guarantee a Winter graduation.</td>
</tr>
<tr>
<td>DATE</td>
<td>ACTIVITY CODE</td>
<td>ACTIVITY</td>
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</tr>
<tr>
<td>Oct. 12, 2009, Mon.</td>
<td>HOLIDAY</td>
<td>THANKSGIVING DAY. (Classes cancelled). Administrative offices closed. Continuing Education evening classes will be re-scheduled. Activities cancelled on Monday, October 12, 2009: Lectures, labs, conferences and other course-related activities held on December 3, 2009 will be cancelled. In its place, all lectures, labs, conferences and other course-related activities that are normally held on Monday will be held on Thursday, December 3, 2009. This change in schedule is to make up for activities that are cancelled on Monday, October 12 due to Thanksgiving Day.</td>
</tr>
<tr>
<td>Oct. 18, 2009, Sun.</td>
<td>W/W--</td>
<td>Deadline for web withdrawing (grade of &quot;W&quot;) or University Withdrawal (grade of &quot;W--&quot;) from Fall 2009 term courses and Continuing Education Fall term courses (with no fee refund).</td>
</tr>
<tr>
<td>Oct. 19, 2009, Mon.</td>
<td>THES</td>
<td>Deadline for submission of master's theses with Nomination of Examiners forms to GPS (Thesis Office) for students expecting to graduate in February 2010. Meeting this deadline does not guarantee a Winter graduation.</td>
</tr>
<tr>
<td>November 2009</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TBA</td>
<td>CONV</td>
<td>10:00 Fall Convocation - AM Ceremony 14:00 Fall Convocation - PM Ceremony</td>
</tr>
<tr>
<td>Nov. 9, 2009, Mon. to Dec. 2, 2009, Wed.</td>
<td>INFO</td>
<td>Online course evaluation period for Fall term: Evaluations available for completion on Mercury through Minerva.</td>
</tr>
</tbody>
</table>

**December 2009**

<table>
<thead>
<tr>
<th>DATE</th>
<th>ACTIVITY CODE</th>
<th>ACTIVITY</th>
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<tbody>
<tr>
<td>Dec. 2, 2009, Wed.</td>
<td>APPGRAD</td>
<td>Deadline to apply to graduate on Minerva for all Undergraduate students and Graduate students in all non-thesis programs (certificates, diplomas [excluding Continuing Education] or master's non-thesis) who expect to complete their program requirements at the end of the <strong>Fall 2009 term</strong> (February 2010 graduation).</td>
</tr>
<tr>
<td>Dec. 3, 2009, Thurs.</td>
<td>INFO</td>
<td>Last day for the Fall 2009 term for students to request fee exemptions and to submit legal documents for proof of Canadian citizenship and proof of Quebec residency to the Enrolment Services Office. Students in Continuing Education should submit their documents directly to the Centre for Continuing Education. Documents received after this date will be updated for the following term only.</td>
</tr>
<tr>
<td>Dec. 3, 2009, Thurs.</td>
<td>LEC</td>
<td>Last day of lectures for courses.</td>
</tr>
<tr>
<td>Dec. 3, 2009, Thurs.</td>
<td>NOTE</td>
<td>The normal Thursday schedule of course activities is cancelled for December 3, 2009. In its place, all lectures, labs, conferences and other course-related activities that are normally held on Monday will be held on <strong>Thursday, December 3, 2009</strong> as well. This change in schedule is to make up for activities that were cancelled on Monday, October 12 due to Thanksgiving Day.</td>
</tr>
<tr>
<td>Dec. 3, 2009, Thurs.</td>
<td>IDCARD</td>
<td>New students can obtain their ID cards once they have registered by going to Enrolment Services, James Admin Building, Room 205. Starting on this date, office hours are Monday to Thursday 9:00 a.m. to 5:00 p.m. and Fridays 10:00 a.m. to 5:00 p.m.</td>
</tr>
<tr>
<td>Dec. 4, 2009, Fri.</td>
<td>INFO</td>
<td>Study Day.</td>
</tr>
<tr>
<td>DATE</td>
<td>ACTIVITY CODE</td>
<td>ACTIVITY</td>
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<tr>
<td>Dec. 24, 2009, Thurs. to Jan. 1, 2010, Fri.</td>
<td>NOTE</td>
<td>Interruption of nightly Grade Roll for Fall 2009 term courses for all faculties. December 24 - Last day for grades to display on the unofficial transcript before the holiday break. January 5 - First day for grades to display on the unofficial transcript after the holiday break.</td>
</tr>
<tr>
<td>Dec. 31, 2009, Thurs.</td>
<td>REG</td>
<td>Deadline for cancellation of registration for the Winter term except Continuing Education. (Deposit is non-refundable for new students.)</td>
</tr>
<tr>
<td>January 2010</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jan. 1, 2010, Fri.</td>
<td>HOLIDAY</td>
<td>NEW YEAR’S. Administrative offices will be closed. Library hours available at Reference Desks.</td>
</tr>
<tr>
<td>Jan. 4, 2010, Mon.</td>
<td>LEC</td>
<td>Winter term lectures begin.</td>
</tr>
<tr>
<td>Jan. 4, 2010, Mon. to Jan. 19, 2010, Tues.</td>
<td>ORIENT</td>
<td>First-Year Resource Room opens daily (9:00 a.m. to 5:00 p.m.), Brown Student Services Building, Room 2100, 3600 McTavish Street.</td>
</tr>
<tr>
<td>Jan. 4, 2010, Mon.</td>
<td>ORIENT</td>
<td>Faculty Orientation for new undergraduate and graduate students in the Faculty of Agricultural and Environmental Sciences (5:30 p.m. to 7:00 p.m.) Ceilidh, Centennial Centre.</td>
</tr>
<tr>
<td>Jan. 4, 2010, Mon.</td>
<td>REG</td>
<td>Deadline for new students to register for Winter term without a late registration fee for all faculties.</td>
</tr>
<tr>
<td>Jan. 5, 2010, Tues.</td>
<td>NOTE</td>
<td>First day for grades for the Fall 2009 term courses to display on the unofficial transcript after the holiday break (nightly Grade Roll resumes on January 4).</td>
</tr>
<tr>
<td>Date</td>
<td>Activity Code</td>
<td>Activity</td>
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</tr>
<tr>
<td>Jan. 24, 2010, Sun.</td>
<td>W/W--</td>
<td>Deadline to web withdraw (grade of &quot;W&quot;) or University Withdrawal (grade of &quot;W--&quot;) from Winter 2010 term courses with full fee refund. <strong>Readmitted students</strong> - less $100 minimum charge in the case of complete withdrawal for students not registered in the Fall. <strong>New students</strong> - less deposit or $100 minimum charge in case of complete withdrawal.</td>
</tr>
<tr>
<td>February 2010</td>
<td></td>
<td><strong>TBA</strong>  <strong>EVENT</strong>  <strong>Senate Steering Meeting to approve degrees granted at the end of Fall 2009 term (Spring 2010 Convocations).</strong></td>
</tr>
<tr>
<td>Feb. 1, 2010, Mon.</td>
<td>EXCH</td>
<td>Deadline for McGill students to submit supporting documentation for a student exchange application for the Fall 2010 and/or Winter 2011 term to Student Exchanges and Study Abroad Office.</td>
</tr>
<tr>
<td>Feb. 1, 2010, Mon.</td>
<td>THES</td>
<td>Deadline to submit doctoral theses with Nomination of Examiners forms to GPS (Thesis Office) for students expecting to convocate in Spring 2010. Meeting this deadline does not guarantee a Spring graduation.</td>
</tr>
<tr>
<td>Feb. 11, 2010, Thurs.</td>
<td>EVENT</td>
<td>Macdonald College Founder's Day. (Sir William C. Macdonald born Feb. 10, 1831; died June 9, 1917.) Classes cancelled 10:00 a.m. to 1:00 p.m.</td>
</tr>
<tr>
<td>Feb. 14, 2010, Sun.</td>
<td>W/W--</td>
<td>Deadline for web withdrawing (with no fee refund) (grade of &quot;W&quot;) or University Withdrawal (grade of &quot;W--&quot;) from Winter 2010 courses.</td>
</tr>
<tr>
<td>Feb. 15, 2010, Mon.</td>
<td>THES</td>
<td>Deadline to submit master's theses with Nomination of Examiners forms to GPS (Thesis Office) for students expecting to convocate in Spring 2010. Meeting this deadline does not guarantee a Spring graduation.</td>
</tr>
<tr>
<td>Feb. 21, 2010, Sun. to Feb. 27, 2010, Sat.</td>
<td>BREAK</td>
<td><strong>STUDY BREAK</strong>. (Classes cancelled for all faculties except Dentistry, Medicine, Continuing Education non-credit courses and English &amp; French credit courses, Stage in Dietetics Level 3.)</td>
</tr>
<tr>
<td>March 2010</td>
<td></td>
<td><strong>Mar. 16, 2010, Tues. (Tentative)</strong>  <strong>REG</strong>  Summer registration opens for Graduate students. Students should confirm dates with individual departments.</td>
</tr>
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<tr>
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<tbody>
<tr>
<td>Mar. 29, 2010, Mon. (Tentative)</td>
<td>APPGRAD</td>
<td>Deadline for all Undergraduate students and Graduate students in all non-thesis programs (certificates, diplomas, master's non-thesis) who expect to complete their program requirements at the end of the Summer 2010 term (Fall 2010 convocation) to apply to graduate on Minerva.</td>
</tr>
<tr>
<td>Mar. 30, 2010, Tues. (Tentative)</td>
<td>REG</td>
<td>Registration for Fall 2010 and Winter 2011 using Minerva begins for all students entering the graduating (U3/U4) year of their program (excluding Law and courses offered by the Desautels Faculty of Management, except as noted below), and all students in Graduate degree programs, except for Continuing Education.</td>
</tr>
<tr>
<td>Apr. 2, 2010, Fri. to Apr. 5, 2010, Mon.</td>
<td>HOLIDAY</td>
<td>EASTER. No classes or exams. Administrative offices closed. Library hours to be announced.</td>
</tr>
<tr>
<td>Apr. 14, 2010, Wed.</td>
<td>INFO</td>
<td>Last day for the Winter 2010 term for students to request fee exemptions and to submit legal documents for proof of Canadian citizenship and proof of Quebec residency to the Enrolment Services Office. Students in Continuing Education should submit their documents directly to the Centre for Continuing Education. Documents received after this date will be updated for the following term only.</td>
</tr>
<tr>
<td>May 2010</td>
<td></td>
<td><strong>May 15, 2010, Sat.</strong>  <strong>W</strong>  Deadline for web withdrawing (grade of &quot;W&quot;) from multi-term courses (D1/D2, N1/N2) that started in the Winter 2010 term and end in the Summer 2010 term or in the Fall 2010 term (with fee refund for the Summer 2010 term).</td>
</tr>
<tr>
<td>DATE</td>
<td>ACTIVITY CODE</td>
<td>ACTIVITY</td>
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</tr>
<tr>
<td>May 15, 2010, Sat.</td>
<td>W--</td>
<td>Deadline for newly-admitted students beginning their graduate thesis program in a Summer Term of Residence to withdraw from the University, with fee refund (less deposit or $100 minimum charge).</td>
</tr>
<tr>
<td>May 24, 2010, Mon.</td>
<td>HOLIDAY</td>
<td>VICTORIA DAY. (Classes cancelled). Administrative offices closed.</td>
</tr>
<tr>
<td>TBA</td>
<td>EVENT</td>
<td>Senate Steering Meeting to approve degrees granted at Spring 2010 Convocations.</td>
</tr>
<tr>
<td>TBA</td>
<td>CONV</td>
<td>Spring 2010 Convocation</td>
</tr>
<tr>
<td>June 2010</td>
<td></td>
<td></td>
</tr>
<tr>
<td>June 30, 2010, Wed.</td>
<td>APP</td>
<td>End of application period for eligibility for guaranteed consideration for admission in September to departments in Graduate Studies. Please verify these dates with individual departments or on the web at <a href="http://www.mcgill.ca/gradapplicants/programs">www.mcgill.ca/gradapplicants/programs</a>.)</td>
</tr>
<tr>
<td>July 2010</td>
<td></td>
<td></td>
</tr>
<tr>
<td>July 28, 2010, Mon. (Tentative)</td>
<td>REG</td>
<td>Last day for returning students in all faculties (except Continuing Education) to register without a late registration fee.</td>
</tr>
<tr>
<td>July 27, 2010, Tues. to Sept. 1, 2010, Wed. (Tentative)</td>
<td>REG</td>
<td>Late registration and course change on Minerva for returning students in all faculties (except Continuing Education) with a $50 late registration fee ($20 for Special students and Graduate part-time students).</td>
</tr>
<tr>
<td>August 2010</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aug. 15, 2010, Sun.</td>
<td>INFO</td>
<td>Last day for students to request fee exemptions and to submit legal documents for proof of Canadian citizenship and proof of Quebec residency to the Enrolment Services Office for the Summer 2010 term. Students in Continuing Education should submit their documents directly to the Centre for Continuing Education. Documents received after this date will be updated for the following term only.</td>
</tr>
</tbody>
</table>
3 Programs Offered

3.1 Graduate Diplomas and Certificates

Graduate diplomas and graduate certificates are programs of study under the academic supervision of Graduate and Postdoctoral Studies. They have as a prerequisite an undergraduate degree in the same discipline.

McGill University offers other diploma and certificate programs under the supervision of the relevant faculties and their Calendars should be consulted for further details.

Graduate Diplomas are offered in:
- Clinical Research (Experimental Medicine)
- Epidemiology and Biostatistics
- Housing
- Islamic Studies
- Library and Information Studies
- Mining Engineering
- Nursing
- Public Accountancy (C.A.)
- Registered Dietician Credentialing (R.D.)
- School and Applied Child Psychology (post-Ph.D.)
- Surgical Health Care Research

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

Graduate Certificates are offered in:
- Assessing Driving Capabilities
- Air and Space Law
- Bioresource Engineering (IWRM)
- Biotechnology
- Comparative Law
- Educational Leadership 1
- Educational Leadership 2
- Library and Information Studies
- Post-M.B.A.
- Teaching English as a Second Language

All graduate regulations apply to graduate diploma and certificate candidates.

3.2 Degrees

Two categories of programs lead to higher degrees at McGill University, master’s programs and doctoral programs.

The following degrees are offered:
- Master of Architecture (M.Arch.)
- Master of Arts (M.A.)
- Master of Business Administration (M.B.A.)
- Master of Education (M.Ed.)
- Master of Engineering (M.Eng.)
- Master of Laws (LL.M.)
- Master of Library and Information Studies (M.L.I.S.)
- Master of Management (M.M.)
- Master of Music (M.Mus.)
- Master of Sacred Theology (S.T.M.)
- Master of Science (M.Sc.)
- Master of Science, Applied (M.Sc.A.)
- Master of Science, Applied (OT) (M.Sc.A. (OT))
- Master of Science, Applied (PT) (M.Sc.A. (PT))
- Master of Social Work (M.S.W.)
- Master of Urban Planning (M.U.P.)
- Doctor of Civil Law (D.C.L.)
- Doctor of Music (D.Mus.)
- Doctor of Philosophy (Ph.D.)

3.3 Master’s Degrees Offered

Master of Architecture Degree
M.Arch. programs offered:
- M.Arch. (professional degree) (Non-Thesis)
- M.Arch. (post-professional degree) (Non-Thesis)

Instruction for the M.Arch. (post-professional degree) is given in the following fields of specialization:
- Architectural History and Theory
- Housing (which includes Affordable Homes, Domestic Environments, Minimum Cost Housing and Urban Design).

Prerequisites:
- M.Arch. (professional degree) – McGill B.Sc.(Arch.) degree, or equivalent;
- M.Arch. (post-professional degree) – an M.Arch. (professional degree) or equivalent professional degree.

See Architecture.

Master of Arts Degree
Programs leading to the degree of Master of Arts are offered in the following areas:
- Anthropology (Thesis and Non-Thesis)
- Development Studies
- Environment
- Gender and Women’s Studies
- Medical Anthropology
- Art History (Non-Thesis)
- Gender and Women’s Studies (Non-Thesis)
- Classics (Thesis and Non-Thesis)
- Communication Studies (Thesis and Non-Thesis)
- Gender and Women’s Studies
- Economics (Thesis and Non-Thesis)
- Development Studies (Non-Thesis)
- Social Statistics (Non-Thesis)
- Education (Thesis and Non-Thesis)
- English (Thesis and Non-Thesis)
- French (Thesis and Non-Thesis)
- Gender and Women’s Studies
- Geography
- Development Studies
- Environment
- Gender and Women’s Studies
- Neotropical Environment
- Social Statistics
- German (Thesis and Non-Thesis)
- Hispanic Studies (Thesis and Non-Thesis)
- History (Thesis and Non-Thesis)
- European Studies (Thesis and Non-Thesis)
- Gender and Women’s Studies (Thesis and Non-Thesis)
- History of Medicine (Non-Thesis)
- Islamic Studies
- Italian (Thesis and Non-Thesis)
- Jewish Studies (Thesis and Non-Thesis)
- Kinesiology and Physical Education (Thesis and Non-Thesis)
- Linguistics (Non-Thesis)
- Mathematics and Statistics (Thesis and Non-Thesis)
- Music (Thesis and Non-Thesis)
- Philosophy
- Bioethics
- Political Science (Thesis and Non-Thesis)
- Development Studies (Thesis and Non-Thesis)
- European Studies (Thesis and Non-Thesis)
- Gender and Women’s Studies (Non-Thesis)
- Neotropical Environment (Thesis and Non-Thesis)
- Social Statistics (Non-Thesis)
- Psychology
- Religious Studies (Thesis and Non-Thesis)
- Bioethics
- Russian
- Sociology (Thesis and Non-Thesis)
- Development Studies (Thesis and Non-Thesis)
Master of Business Administration Degree
A program leading to the degree of Master of Business Administration (M.B.A.) is offered in the following concentrations:
- Finance
- Global Leadership
- Marketing
- Technology and Innovation Management

An EMBA is also offered (joint with HEC).

Prerequisites:
- An undergraduate degree from an approved university. See Management.
- Special programs:
  - M.B.A. with M.D.,C.M.,
  - M.B.A with B.C.L. and LL.B.,
- Master of Manufacturing Management (see Management and Mechanical Engineering).

Master's Degrees in Education
Three types of master's degrees are offered:

The M.A. may be taken in the following areas:
- Counselling Psychology (Thesis and Non-Thesis)
- Culture and Values in Education (Thesis, Non-Thesis and Non-Thesis Coursework)
- Gender and Women's Studies (Thesis and Non-Thesis)
- Educational Psychology (Thesis and Non-Thesis)
- Gender and Women's Studies (Thesis and Non-Thesis)
- Kinesiology and Physical Education (Thesis and Non-Thesis)
- Second Language Education (Thesis and Non-Thesis)
- Gender and Women's Studies

The M.Ed. may be taken in the following area:
- Educational Psychology

The M.Sc. may be taken in the following area:
- Kinesiology and Physical Education (Thesis and Non-Thesis)

Prerequisites:
- A 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's Degree in Engineering
Programs leading to the degree of Master of Engineering are offered in the following areas:
- Aerospace Engineering (Project)
- Biomedical Engineering
- Bioinformatics
- Chemical Engineering (Thesis and Project)
- Environmental Engineering (Project)
- Civil Engineering and Applied Mechanics (Thesis and Project)
- Environmental Engineering (Project)
- Electrical Engineering (Thesis and Project)
- Computational Science and Engineering
- Mechanical Engineering (Thesis and Project)
- Computational Science and Engineering
- Mining and Materials Engineering (Thesis and Non-Thesis)
- Environmental Engineering (Non-Thesis)

Mining (Non-Thesis)
- Metals and Materials (Non-Thesis)

Other degrees:
- Master of Management (M.M.) is offered in Manufacturing Management (see Department of Mechanical Engineering and Faculty of Management).
- Master of Science (M.Sc.) is offered in Chemical Engineering, Civil Engineering, Mechanical Engineering, and Mining and Materials.

Prerequisites:
- Bachelor of Engineering or equivalent, with specialization appropriate for the subject selected for graduate study. See appropriate department.

Master's Degrees in Law
The degree of Master of Laws is offered in:
- Law (Thesis and Non-Thesis)
- Comparative Law (Thesis and Non-Thesis)
- Environment (Thesis and Non-Thesis)
- European Studies
- Air and Space Law (Thesis and Non-Thesis)

Prerequisites:
- An acceptable degree in Law or equivalent qualifications. See Law.

Master of Library and Information Studies Degree
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.

Prerequisites:
- At least a bachelor's degree from a recognized university. See Library and Information Studies.

Master's Degrees in Music
Programs leading to the degrees of Master of Arts and Master of Music are offered in the Faculty of Music.

The M.A. may be taken in:
- Music Technology
- Musicology (Thesis and Non-Thesis)
- Music Education (Thesis and Non-Thesis)
- Theory (Thesis and Non-Thesis)

The M.Mus. may be taken in:
- Composition
- Performance (various options) (Non-Thesis)
- Sound Recording (Non-Thesis)

Applicants to the Performance program are required to pass auditions in their specialty.

Prerequisites:
- Bachelor of Music or Bachelor of Arts with concentration in the area selected for graduate study. See Music.

Master's Degrees in Nursing
Two types of master's degrees are offered: Master of Science (Applied) and Master of Science (with thesis). These two-year programs are designed to prepare clinicians and researchers for the expanding function of nursing within the health care delivery system.

Prerequisites:
- Preparation in nursing comparable to the bachelor's degree offered at McGill and accomplishment and development as a nurse. A current nursing registration is required. Non-nurses holding a bachelor's degree comparable to a B.Sc. or B.A. program offered at McGill may be admitted to a Qualifying Program. See Nursing.
**Master's Degrees in Religious Studies**

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.

Prerequisites:
- B.A. with specialization in religious studies or theology. See Religious Studies.

**Master of Science Degree**

Programs leading to the degree of Master of Science are provided in the following areas:

- Agricultural Economics
- Animal Science
- Atmospheric and Oceanic Sciences
- Computational Science and Engineering
- Environment
- Biochemistry
- Bioinformatics
- Chemical Biology
- Biology
- Bioinformatics
- Environment
- Neotropical Environment
- Bioresource Engineering
- Environment
- Integrated Water Resource Management (Non-Thesis)
- Neotropical Environment
- Cell Biology and Anatomy
- Chemical Engineering
- Chemistry
- Chemical Biology
- Civil Engineering and Applied Mechanics
- Communication Sciences and Disorders
- Computer Science (Thesis and Non-Thesis)
- Bioinformatics
- Computational Science and Engineering
- Dental Science (Thesis and Non-Thesis)
- Oral and Maxillofacial Surgery
- Earth and Planetary Sciences
- Environment
- Entomology
- Environment
- Neotropical Environment
- Epidemiology and Biostatistics (Thesis and Non-Thesis)
- Environment (Non-Thesis)
- Food Science and Agricultural Chemistry (Thesis and Non-Thesis)
- Geography
- Environment
- Neotropical Environment
- Genetic Counselling (Non-Thesis)
- Human Genetics
- Bioinformatics
- Human Nutrition
- Kinesiology and Physical Education (Thesis and Non-Thesis)
- Mathematics and Statistics (Thesis and Non-Thesis)
- Bioinformatics
- Computational Science and Engineering
- Mechanical Engineering
- Medical Radiation Physics
- Medicine, Experimental
- Bioethics
- Environment
- Family Medicine
- Microbiology and Immunology
- Microbiology (Macdonald Campus)
- Environment
- Mining and Materials Engineering
- Neuroscience
- Nursing
- Otolaryngology
- Parasitology
- Bioinformatics
- Environment
- Pathology
- Pharmacology and Therapeutics
- Chemical Biology
- Physics
- Physiology
- Bioinformatics
- Plant Science
- Bioinformatics
- Environment
- Neotropical Environment
- Psychiatry
- Psychology
- Rehabilitation Science (Thesis and Non-Thesis)
- Renewable Resources
- Environment
- Environmental Assessment (Non-Thesis)
- Neotropical Environment
- Surgery, Experimental

Prerequisites:
- Bachelor of Science in the subject selected for graduate work. See appropriate unit.

**Master of Science, Applied Degree**

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 course work.

Programs are available in:

- Animal Science
- Bioresource Engineering
- Environment
- Environmental Engineering
- Neotropical Environment
- Biotechnology
- Chemistry
- Communication Sciences and Disorders
- Human Nutrition
- Nursing
- Occupational Therapy
- Occupational Health
- Plant Science
- Physical Therapy
- Other degrees:
  - Master of Science, Applied (OT)
  - Master of Science, Applied (PT)

Prerequisites:
- A bachelor's degree in the subject selected for graduate work. See appropriate unit.

**Master of Social Work Degree**

The M.S.W. degree (Thesis and Non-Thesis options) represents a second level of professional study in which students build competence in a chosen field of practice.

Prerequisites:
- Bachelor's degree in Social Work including courses in statistics and social science research methods. See Social Work.
- Special program:
  - M.S.W. with B.C.L. and LL.B.

**Master of Urban Planning Degree**

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

An option in Urban Design is also offered.

Prerequisites:
- Bachelor's degree in any one of the following: Anthropology,
3.4 Doctoral Degrees Offered

Doctor of Civil Law Degree
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.
Prerequisites:
B.C.L. or LL.B. and usually LL.M. See Law.

Doctor of Music Degree
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.
Prerequisite:
M.A. in composition. See Music.

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).
Prerequisites:
Master's degree in Performance, and professional and teaching experience. See Music.

Doctor of Philosophy Degree
Programs leading to the degree of Doctor of Philosophy are offered in the following areas:
- Animal Science
- Bioinformatics
- Anthropology
- Neotropical Environment
- Architecture
- Art History
- Gender and Women's Studies
- Atmospheric and Oceanic Sciences
- Biochemistry
- Bioinformatics
- Chemical Biology
- Biology
- Bioinformatics
- Developmental Biology
- Environment
- Neotropical Environment
- Biomedical Engineering
- Bioinformatics
- Bioresource Engineering
- Environment
- Neotropical Environment
- Cell Biology and Anatomy
- Chemical Engineering
- Chemistry
- Chemical Biology
- Civil Engineering and Applied Mechanics
- Classics
- Communication Studies
- Gender and Women's Studies
- Communication Sciences and Disorders
- Language Acquisition
- Computer Science
- Bioinformatics
- Counselling Psychology
- Earth and Planetary Sciences
- Environment
- Economics
- Educational Psychology
- Educational Studies
- Gender and Women's Studies
- Electrical Engineering
- English
- Entomology
- Environment
- Neotropical Environment
- Epidemiology and Biostatistics
- Food Science and Agricultural Chemistry
- French
- Gender and Women's Studies
- Geography
- Environment
- Gender and Women's Studies
- Neotropical Environment
- German
- Hispanic Studies (Spanish)
- History
- Human Genetics
- Bioinformatics
- Human Nutrition
- Information Studies
- Islamic Studies
- Gender and Women's Studies
- Linguistics
- Language Acquisition
- Management
- Mathematics and Statistics
- Bioinformatics
- Mechanical Engineering
- Medicine, Experimental
- Environment
- Microbiology and Immunology
- Microbiology (Macdonald Campus)
- Bioinformatics
- Environment
- Mining and Materials Engineering
- Music
- Neuroscience
- Nursing
- Psychosocial Oncology
- Occupational Health Sciences
- Parasitology
- Bioinformatics
- Environment
- Pathology
- Pharmacology and Therapeutics
- Chemical Biology
- Philosophy
- Environment
- Gender and Women's Studies
- Physics
- Physiology
- Bioinformatics
- Plant Science
- Bioinformatics
- Environment
- Neotropical Environment
- Political Science
- Neotropical Environment
- Psychology
- Language Acquisition
- Psychosocial Oncology
- Rehabilitation Science
- Religious Studies
- Renewable Resources
- Environment
- Neotropical Environment
- Russian
- School/Applied Child Psychology
- Social Work
- Sociology
- Environment
These designated periods of residence represent minimum time required for the master's degree without being required to submit a master's thesis.

3.5 Postdoctoral Research

See section 9 “Postdoctoral Research” for information about postdoctoral research at McGill University.

4 Program Requirements

4.1 Master's Degrees

4.1.1 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.

a) 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).

b) 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.Sc.A. in Communication Sciences and Disorders, S.T.M., Religious Studies.

c) 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.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.

d) 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 3 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.

4.1.2 Course Work – Master's Degrees

Program requirements are outlined in the relevant departmental sections of the Calendar.

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 course work (not thesis, project or stage) 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 mark of B- or better, all those courses which 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 towards 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 towards a McGill degree keeping in mind that a maximum of one-third of the course work (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 towards the degree. No double counting is ever allowed. This regulation also applies to doctoral programs.

4.1.3 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 “Important Dates 2009-2010”, section 2, 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.

4.1.4 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.

4.2 Doctoral Degrees

4.2.1 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 10.3 “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 by Graduate and Postdoctoral Studies, it will not be changed after obtaining the master’s degree if the date falls after registration in the program. If a previous doctoral Studies, it will not be changed after obtaining the master’s degree if the date falls after registration in the program. If a previous 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.

### 4.2.2 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 section 10.4 “Ph.D. Comprehensives Policy”.

### 4.2.3 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 marks reported to Graduate and Postdoctoral Studies 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.

### 4.2.4 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 “Important Dates 2009-2010”, section 2, 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. The appointment of the examiners and communication with them is the duty and privilege of Graduate and Postdoctoral Studies. Under no circumstances should any student or department contact the external examiners. Guidelines and deadlines are available at www.mcgill.ca/gps/students/thesis/programs/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.

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

#### 4.2.5 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.


### 4.3 Ad Hoc Programs (Thesis Option Only)

In exceptional cases, an applicant who wishes to pursue a master's (Thesis option only) or Ph.D. program in an academic department which is not currently authorized to offer graduate programs, may be admitted to an Ad Hoc program. The application, including a research proposal, is examined by an Admissions Committee in the department which has familiarity with the proposed research area and experience in directing graduate studies.

Once the Admissions Committee makes a favourable recommendation, Graduate and Postdoctoral Studies confirms an Advisory Committee (recommended by the academic unit) to be responsible for program planning and monitoring of research progress. The regulations are fully described in the document “Procedures for Admission in Ad Hoc Master’s and Doctoral Programs”, available from GPS.

### 4.4 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 to offer its own graduate programs, may be admitted to an Ad Personam program. The regulations are fully described in a document available from GPS.

### 4.5 Course Work 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).

English and French language courses offered by the English and French Language Centre or the Centre for Continuing Education may not be taken for coursework credits toward a graduate program.

All substitutions for course work 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.
5 Admission

Website: www.mcgill.ca/gradapplicants
Email: graduate.admissions@mcgill.ca

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

5.1 Application for Admission

Application information and the online application form are available at www.mcgill.ca/gradapplicants/apply. Applicants (with some exceptions) are required to ask two instructors familiar with their work to send letters of recommendation. All applicants must themselves send, or ask the appropriate university authorities to send, two official or certified copies of their complete academic record from each university-level institution attended to date. McGill graduates do not need to submit McGill transcripts. Letters of recommendation and official transcripts must be sent directly to the department concerned. 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 considered. This sum must be paid by credit card and is non-refundable when submitting the online application form. Candidates for Special, Visiting Student, 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 certified translation. 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 supporting documents, must reach departmental offices according to individual department dates for guaranteed consideration. Applicants should contact the department concerned. 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 be considered. Candidates will be notified of acceptance or refusal as quickly as possible.

Admission to Graduate Programs at McGill is highly competitive and the final decision rests with Graduate and Postdoctoral Studies. Admission decisions are not subject to appeal.

5.2 Admission Requirements (minimum requirements to be considered for admission)

Applicants should be graduates of a university of recognized reputation and hold a bachelor’s degree equivalent to a McGill degree in a subject closely related to the one selected for graduate work. This implies that at least one-third of all undergraduate courses should have been devoted to the subject itself and another third to cognate subjects.

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/internationaldegree for information on mark/grade equivalencies and degree requirements from countries in Europe and around the world.

Admission to Graduate Programs at McGill is highly competitive and the final decision rests with Graduate and Postdoctoral Studies. Admission decisions are not subject to appeal.

5.3 Graduate Record Examination and Other Admission Tests

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 the 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. 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 submit the scores along with their other admission material.

This credential is of special importance in the case of applicants whose education has been interrupted, or has not led directly towards 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.

Applicants to graduate programs in Management must submit scores from the Graduate Management Admissions Test (GMAT).

5.4 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 school, 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

<table>
<thead>
<tr>
<th>iBT (internet-based test)</th>
<th>PBT (paper-based test)</th>
<th>CBT (computer-based test)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>86 overall, (no less than 20 in each of the four component scores)</td>
<td>550</td>
<td>213</td>
</tr>
</tbody>
</table>

* The CBT is no longer being offered. CBT Test results will be accepted as long as considered valid by ETS.

N.B. an institutional version of the TOEFL is not acceptable.
2) IELTS (International English Language Testing System): a band score of 8.5 or greater.
3) MELAB (Michigan English Language Assessment Battery): a mark of 95% 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".

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

5.5 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. 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. 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 departmental dates for guaranteed consideration.

Successful completion of the work of the Qualifying Program does not automatically entitle the student to proceed towards a degree. Qualifying-year students must re-apply for admission to the program for which they seek qualification. 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.

5.6 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.

5.7 Admission to Two Degree Programs

Students may, with special permission granted by Graduate and Postdoctoral Studies, be admitted to two degree programs or to two departments or faculties. Students are never permitted to pursue two full-time degree programs concurrently.

5.8 Admission to an Ad Personam Joint Program

Ad Personam joint graduate programs are restricted to master's Thesis option and Ph.D. programs. Students shall be admitted and registered by one department, to be known as the "first department”. 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 by the second department. The student shall undertake research under the joint supervision of both departments.

Students shall fulfill the degree requirements of the first department and shall complete all the requirements specified by the second department in the request for admission. This program is described in more detail in a document available from GPS.

5.9 Admission to an Ad Hoc Program (Thesis)

In exceptional cases, admission to an Ad Hoc program (Thesis) may be considered. Before Graduate and Postdoctoral Studies will authorize the admission of a student into an Ad Hoc program, it must receive a favourable report from a departmental committee constituted to examine the program in question.

Candidates, through the supervisor designated by the academic department most closely related to their research field, must submit a research proposal, an outline of the course work needed including a comprehensive examination (for doctoral programs) in the relevant field, and the list of four supervisory committee members.

Once the request has been approved, the candidate may register following all the regular procedures. Full description of the admission procedure is available from GPS.

5.10 Reinstatement and Admission of Former Students

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 Graduate and Postdoctoral Studies 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. The final decision rests with GPS. Normally, GPS will approve the departmental recommendation. 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.

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.

Implementation: This procedure took effect in January 2004.

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.


5.11 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.
6 Regulations

6.1 Categories of Students

6.1.1 Full-time Students

Full-time students are students with a registration status of full-time and paying full-time fees. Full-time master’s, diploma and certificate candidates must show a minimum of 12 credits per term on their record.

6.1.2 Half-time Students (Thesis programs)

In some departments, students are permitted to proceed towards a degree on a half-time basis, i.e., students are permitted to register half-time instead of full-time during sessions of residence.

It is expected that half-time students will spend 50% of their time in the department participating in course work, seminars, discussions, etc., with the staff and the full-time students.

Half-time students are reminded that they must complete the degree within the time limitation imposed by Graduate and Postdoctoral Studies, and that if they choose to be half-time they must: a) be so for an even number of half-time terms (i.e., two half-time terms equal one full-time term) and b) fulfil the minimum residence requirement in their program.

6.1.3 Part-time Students

Certain degree programs can be followed on part-time basis (e.g., M.Ed., M.Eng. Non-Thesis option, M.B.A., M.S.W. Non-Thesis option, and S.T.M.). Students in non-thesis programs (including the C.A. program) as well as Special, Visiting and Qualifying, Certificate and Diploma students, not taking at least 12 credits per term, are considered to be part-time. Students may, in some departments, proceed towards the degree on a part-time basis.

Part-time students are reminded that they must complete the degree within the time limitation imposed by Graduate and Postdoctoral Studies.

Part-time students who do not take any courses or drop all courses, during any semester, automatically become non-resident students and are charged fees accordingly.

In cases of part-time and transfer students, all coursework might not be completed during the residency. It must therefore be completed during one or more additional terms (non-thesis extensions). Fees are charged accordingly.

6.1.4 Additional Session (Thesis Programs) and Non-Thesis Extension (Non-Thesis Programs) Students

Students in additional session or non-thesis extension are students with a registration status of additional session (thesis programs) or non-thesis extension (non-thesis programs) and paying fees accordingly. The following are such students:

1. Graduate students who have completed the residency requirements in a master’s program.
2. Graduate students who have completed 8 full-time semesters in a doctoral program (when admitted to Ph.D. 1).
3. Graduate students who have completed 6 full-time semesters in a doctoral program (when admitted to Ph.D. 2).

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. It is expected that, at this stage, all the course work and comprehensive examinations will have been completed and the student will be engaged in thesis preparation.

Graduate students in non-thesis programs, graduate diplomas and certificates who have registered for all required courses but have not completed the work and/or have completed the residency requirements must register as non-thesis extension students and pay fees accordingly. For example, a student who has registered for a last course such as a project but has not completed it, must register as non-thesis extension status until graduation. Students in a non-thesis extension session who are not registered for at least 12 credits per term, are not considered engaged in full-time studies.

6.1.5 Qualifying Students

Students admitted to a Qualifying Program are known as Qualifying Students. They must meet the minimum entrance requirements of Graduate and Postdoctoral Studies. The courses taken during a qualifying year will not be credited towards a degree program. Students are registered in graduate studies but have not yet been admitted to a degree program. These students take a full load (12 credits minimum) per semester of undergraduate courses as specified by the department. Only one qualifying year is permitted.

6.1.6 Special Students

Students who meet the minimum entrance requirements of Graduate and Postdoctoral Studies and wish to take one, or at most two, graduate-level courses per term (6 credits) without intention of proceeding to a degree or diploma are termed Special Students. After completion of a maximum of 12 credits, an applicant may not continue as a Special Student.

If graduate Special Students subsequently become candidates for higher degrees, they may receive academic credit for relevant graduate courses taken as Special Students. They must apply every year.

Students who wish to take undergraduate courses only must apply as Special Students in the undergraduate faculty concerned, even if they already hold degrees.

6.1.7 Visiting Students

Visiting Students are those students who are registered in a degree program at another university and who have obtained written permission from both universities to take a course(s) for credit towards that degree program. Students studying in the province of Quebec who are in this category are eligible for a transfer of credit if the required permission is obtained on Quebec Inter-University Transfer forms. These forms are available online at www.mcgill.ca/student-records/iut. McGill students registering for courses required for their degree program at another Quebec university are required to pay for the course(s) at the home university.

McGill University and Université de Montréal participate in an exchange (graduate) with the University of British Columbia and the University of Toronto.

As a rule, graduate students should not register for courses through Inter-University Transfers (IUT) during the last semester before graduation. There are considerable delays in receiving official transcripts which delay the degree audit process and graduation. If special departmental permission is given for such a course to be taken in the last semester, there will be no extension given for the grade submission deadline.

6.1.8 Graduate Research Trainee

Graduate students registered in a degree program at another university who wish to come to McGill to do research only may do so after acceptance by GPS. They:

- must apply for admission at the beginning of every academic year (i.e., Fall admission each year; if they begin a 12-month research visit in the Winter term (January) they must apply to be admitted again for the following Fall term (September));
- must include a letter of permission and official transcripts as part of the application package;
- must not provide proof of competency in English;
- are not charged fees for any term of registration including Summer;
- are not charged any Student Service or Ancillary fees; students will automatically have access to McGill libraries but must purchase memberships for athletics or other services;
- may be required to provide proof of basic health insurance coverage upon arrival at McGill.

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6.1.9 Non-Resident Status
(may be granted to students in residence terms only)

1. Departments, with the approval of Graduate and Postdoctoral Studies, may permit or require candidates to spend one session at another institution; it is understood that this session must be one of full-time work, and that the institution selected must be capable of providing expert supervision and facilities for research appropriate to the candidate, in the field selected.

Permission to spend a required year of residence at another university must be obtained before the beginning of the session in which the student will be absent. A program of the work projected and particulars of the institution selected must be sent, accompanied by a letter from the Chair of the department, to the Director of GPS for approval. Permission is only granted to students who have already completed one full session at McGill.

The student will be required to register and pay the normal full-time McGill tuition fee less any tuition fee payable to the host institution. Other student-related fees are not levied and the ID card is not validated.

Students participating in a formal exchange program must register and pay full-time tuition including other student-related fees. The ID card is not validated.

2. Students who wish to take a leave (such as for work purposes) from the University for a maximum period of one year before returning to complete their residence requirements must first obtain permission to do so both from their department and GPS. The student must register as a Non-Resident student, and pay the non-resident fee. Student services fees are not levied and the ID card is not validated. Students can only be non-resident for a maximum of one year. The non-resident fee is $100 per term.

6.1.10 Leave of Absence Status

A leave of absence may be granted by Graduate and Postdoctoral Studies for maternity or parenting reasons or for health reasons (see section 10.6 "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 justifying the leave. The department shall forward the request to GPS.

Students and Postdocs 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. A student on leave of absence during the Fall term must register for an active term of study in the Winter term (at least) in order to apply for graduation. A student on leave of absence during the Winter and/or Summer terms must register for an active term of study in the Fall term (at least) in order to apply for graduation.

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/postdocs/becoming/leave under "Information on the Funding Council Leave Policies for Graduate Students and Postdoctoral Fellows".

6.1.11 Medical Residents

Residents and fellows on staff of teaching hospitals associated with the University are included in Graduate and Postdoctoral Studies statistics. They must apply for admission to be Special Students or for admission to a degree program, a graduate diploma or certificate.

6.1.12 McGill Staff as Graduate Students

Members of the teaching staff of the University up to and including the rank of lecturer may enrol as candidates for a degree, diploma or certificate. If their teaching duties are designated as full-time, they may only enrol as half-time students.

Professors members of the academic staff may not enrol in graduate degree and diploma programs. This rule shall apply also to any persons who have been on the professorial staff within the previous 12 months, unless they resign completely from their positions at McGill.

Should persons registered in graduate studies be promoted to professorial rank, they can no longer remain graduate students, unless they resign or are granted a leave of absence from their professorial appointments.

In certain exceptional cases, professorial members of the academic staff may apply to Graduate and Postdoctoral Studies to enter graduate programs in academic units other than their own. GPS may grant permission if it is satisfied that the applicant's teaching unit and proposed unit for graduate study are sufficiently remote that conflict of interest situations will not arise. Permission must be granted before any courses are taken towards the proposed degree.

6.1.13 Quebec Inter-University Transfer Agreement (IUT)
The Quebec Inter-University Transfer (IUT) agreement permits concurrent registration at McGill and another Quebec institution.

6.1.13.1 McGill Students

Regular undergraduate and graduate degree, diploma or certificate students registered at McGill may register, with their faculty's permission, at any university in the province of Quebec for three, or in some cases six, credits per term in addition to their registration at McGill. These courses, subject to faculty regulations, will be recognized by McGill for the degree that you are registered for, up to the limit imposed by the residency requirements of the program. Normally, you must complete a minimum residency requirement of 60 credits at McGill in order to qualify for a McGill degree (you should check with your faculty). This privilege will be granted if there are valid academic reasons.

If you want to take advantage of this agreement, consult your student affairs office for details. Note that this agreement is subject to the following conditions:

- The other universities concerned may, at their discretion, refuse the registration of a student for any of their courses.
- You must complete your faculty and program requirements.
- You are responsible for ensuring that the McGill Class Schedule permits you to take these courses without conflict.
- The universities concerned are not responsible for special arrangements in cases of examination or class schedule conflicts.
- Marks earned at the host university will not appear on McGill transcripts or be included in McGill grade point averages.
- If you are attending McGill as an exchange student from outside Quebec, you are not eligible to take courses at another Quebec institution through the IUT agreement.
- You should be aware that late results received from host universities may delay your graduation.

If you are a scholarship holder, you should consult with your student affairs office concerning eligibility for continuation or renewal of your award(s).

You must initiate an online Quebec Inter-University Transfer (IUT) application to request the required authorizations at www.mcgill.ca/student-records/iut. You may find additional information posted at your faculty website.

Note: Once the Quebec Inter-University Transfer (IUT) application is approved by both the home and host universities, you must register in the same course for which you obtained electronic approval. The method of registration of the host university will vary (e.g., web, in-person, phone, etc.). You must allow sufficient time to complete and submit your electronic application because you are responsible for adhering to all the host university's registration deadlines. If you decide later to drop or withdraw from the course(s) for which approval was granted, you will need to drop or withdraw from the course using the host
university’s registration method AND submit this change on the online Quebec Inter-University Transfer (IUT) application.

The host institution automatically submits grades for completed courses to McGill.

6.1.13.2 Visiting IUT Students
If you are a student at another Quebec university and you want to take courses at McGill using the Quebec Inter-University Transfer (IUT) agreement, you must initiate an online application to request the required authorizations at www.mcgill.ca/student-records/iut. You should also refer to your home university website for regulations on the number of credits allowed, as well as the policies for transferring the credits.

Note: Once the Quebec Inter-University Transfer (IUT) application is approved by both the home and host universities, you remain responsible for registering in the same course for which you have obtained electronic approval. At McGill, you have to register on Minerva (www.mcgill.ca/minerva). You will be informed via email of the necessary registration steps once your application has been approved. You must allow sufficient time to complete and submit your electronic application, because you are responsible for adhering to all McGill’s registration deadlines. If you decide later to drop or withdraw from the course(s) for which approval was granted, you will need to drop or withdraw from the course on Minerva AND submit this change on the online Quebec Inter-University Transfer (IUT) application.

McGill automatically submits grades for completed courses to your home university.

6.2 Registration

6.2.1 Registration for Fall and Winter Terms (Including Additional Session and Non-Thesis Extension Students)
All returning and new graduate students must register online at www.mcgill.ca/minerva, after completing a Minerva Course Selection Form and obtaining departmental approval.

Courses may be added until the end of the course change period without penalty.

Returning Students:
Returning students register via Minerva between Tuesday, March 31 and Monday, July 27.

Students will be charged a late registration fee during the late registration period. To avoid the late registration fee students must access www.mcgill.ca/minerva and register for REGN RCGR (the Registration Confirmation course) in both the Fall (CRN 2334) and Winter (CRN 2262) terms.

Successful completion of registration is contingent upon acceptable academic standing in the previous session and payment of any previous outstanding fees and fines.

Newly-Admitted Students:
New students entering in September 2009 register on Minerva between Tuesday, July 14 and Tuesday, September 1.

Students will be charged a late registration fee during the late registration period. To avoid the late registration fee students must access www.mcgill.ca/minerva and register for REGN RCGR (the Registration Confirmation course) in both the Fall (CRN 2334) and Winter (CRN 2262) terms.

New students entering in January 2010 register on Minerva between Thursday, December 3 and Monday, January 4.

Students will be charged a late registration fee during the late registration period. To avoid the late registration fee students must access www.mcgill.ca/minerva and register for REGN RCGR (the Registration Confirmation course) in the Winter (CRN 2262) term.

Students must register (and pay fees) annually up to and including the term of graduation. Outstanding tuition fees must be paid before graduation. A graduate student registered in the Winter term who graduates in February will have their Winter registration and fees cancelled at the end of February.

6.2.2 Fee Policies Related to Registration
Refer to section 8 “Fees and Expenses”; particular attention should be paid to section 8.9 “Fees and Withdrawal from the University” and section 8.10 “Other Policies Related to Fees”.

6.2.3 Summer Registration
Detailed Summer registration information will be available in the middle of March in individual departments and at www.mcgill.ca/gps/students/registration.

Course Registration
Students taking summer courses register within Graduate and Postdoctoral Studies deadlines on Minerva at www.mcgill.ca/minerva after completing a Minerva Course Selection Form and obtaining departmental approval.

Summer Term of Residence
Students in thesis programs who wish to register for a Summer term to count as part of their residence requirements must advise their department in March and complete the appropriate Summer Registration Form in April. Newly-admitted students beginning their graduate thesis program in a Summer Term of Residence can get 100% refund (less $100 minimum or registration deposit if applicable) up to and including the May 15th withdrawal date. Students in thesis programs, who at the end of the Winter term are continuing in their programs are expected to devote the summer to research and are considered “continuing students”.

6.2.4 Courses taken in the Centre for Continuing Education
In the Fall and Winter terms, students may add credit courses (500 level or higher) offered through the Centre for Continuing Education (CCE) directly on Minerva. Fall term courses can be added on Minerva starting August 15. Winter term courses can be added on Minerva starting December 15.

Non-credit general interest or languages courses cannot be added directly by the student. Students may register for these courses in person at the CCE, where the course(s) will be added to their record as “Extra” to their program and course fees will be charged.

Summer courses offered through the CCE cannot be added directly by the student. To add these courses, students must bring a copy of their approved Minerva Course Selection Form to Graduate and Postdoctoral Studies where, subject to space availability and program controls, the course(s) will be added to their record. To register for courses offered through the CCE, students must be registered in their graduate studies program. All courses taken at CCE must be completed. If the course has been dropped on Minerva according to CCE course drop/withdrawal deadlines, GPS reserves the right to place limitations on the number of Continuing Education courses taken for any one program. Approval from GPS must be obtained prior to registration.

Exception: A registered student in 2008-09 (not on a leave of absence), who has completed the residency in a thesis program, and who meets the August 31 thesis submission deadline to GPS (Thesis Section), does not need to register for the 2009-10 academic year. The student should not expect to graduate in Fall 2009, but must graduate by Fall 2010 graduation at the latest. Otherwise the student must be reinstated and will be charged retroactive registration fees for all unregistered sessions/terms up to and including the term in which they graduate. Students who have already registered for the year must ask Graduate and Postdoctoral Studies, IN WRITING, to delete their registration at the time of their theses submission.

If the thesis is submitted after August 31, and the student graduates in February of the next year, he/she must register for the Fall term and pay fees. The last term of registration will show the graduation narrative, i.e., Fall for February graduation, Winter for May/June graduation and Summer for October Graduation. If the thesis is submitted after August 31, and the student graduates in May/June of the next year, he/she must register for Fall and Winter terms and pay fees.
6.2.5 Courses Which Cannot Be Taken for Credit in a Graduate Program Unless They Have Formally Been Approved for a Specific Program

Three courses are offered through the English and French Language Centre for graduate students whose first language is not English, and some writing courses are offered in other units. These courses cannot be counted toward the requirements of a graduate program. The courses are:

**ESLN 500 ESL: RESEARCH ESSAY AND RHETORIC.** (3) (3 hours) (Prerequisite: Placement test or ESLN 400.) (Restriction: Not open to students who have taken or are taking EFRL 250.) For the near-native speaker of English. Principles and use of academic research, genres, rhetorical strategies, and editing skills.

**ESLN 640 FUNDAMENTALS OF ACADEMIC WRITING FOR GRADUATE STUDENTS.** (3) (Prerequisite: Placement test.) (Restriction: Open to graduate students for whom English is a second language.) This course cannot be counted towards course requirements of any graduate program. Focus is on structuring an academic essay and expressing complex ideas. Multiple drafts. Independent learning strategies for academic reading, critical thinking, vocabulary building, and self-editing. Review of writing mechanics.

**ESLN 650 PRONUNCIATION & COMMUNICATION.** (3) (3 hours) (Restrictions: Open only to graduate students for whom English is a second language.) Focus on developing pronunciation and communication skills, including aspects of pronunciation that most affect intelligibility, and with verbal and non-verbal techniques for effective presentations.

Note: The following writing courses are available for senior graduate students but cannot be counted toward the requirements of a graduate program:

**EDEC 645 SCIENCE WRITING AND PUBLISHING.** (3) (Restriction: Limited to senior graduate students - Ph.D. and above.) Techniques for writing reader-sensitive scientific articles and grant applications, including how to express abstract ideas.

**REDM 610 WRITING SCIENCE ARTICLES 1.** (3) (Prerequisite: Permission of instructor.) (Restrictions: Restricted to graduate students in the Faculty of Science; graduate students from other faculties considered, space permitting. Enrollment is limited to 12 students. The language of instruction is English and it is not intended as an ESL course. Course is graded pass/fail.) Principles and techniques for clear scientific writing with an emphasis on how to transform complex ideas into direct and precise ones by explaining research to peers and writing for interdisciplinary audiences.

**REDM 710 WRITING SCIENCE ARTICLES 2.** (3) (Prerequisite: Permission of instructor.) (Restrictions: Restricted to Ph.D. students in the Faculty of Science; M.Sc. students from the Faculty of Science and Ph.D. students from other faculties considered, space permitting. Enrollment is limited to 12 students. The language of instruction is English and it is not intended as an ESL course. Course is graded pass/fail.) Skills for writing and publishing scientific articles, including peer-reviewed manuscripts and short, critical reviews of published articles. Topics include techniques for developing logical arguments and writing publishable manuscripts.

6.2.6 Registration for Two Degree Programs Concurrently

No student may register in two degree programs or in two departments or faculties or two institutions concurrently without special permission granted by Graduate and Postdoctoral Studies. Students are advised that permission is never granted to attempt two full-time programs concurrently. Letters of recommendation, including details of the proportions of time that the student intends to allot to each program, must be received from the Chair of each department concerned. Each year, a progress report must be submitted from the two departments concerned to GPS before a student in this category will be permitted to register.

6.2.7 Time Limitation

Candidates for master's degrees must complete the degree within three years of initial registration. If the degree is pursued strictly on a less than full-time basis, it must be completed within five years of initial registration.

In exceptional cases, a student who wishes to submit a thesis, or to complete outstanding degree requirements, after withdrawal may do so only on the recommendation of the department concerned. A graduate application must be submitted by stated deadlines and re-admission fees will apply. The final decision rests with GPS.

By annual registration, all doctoral candidates may maintain their connection with the University for four years after completing their residence requirements.

The object of these regulations is to encourage candidates to complete their theses and qualify for their degree without undue delay.

*Council of the FGSR - February 2, 1996*

6.2.8 Withdrawal from a Degree Program

Departments have the right to ask students to withdraw from the program if progress is not satisfactory, or if they have failed two courses required for their program, or for lack of performance in research. Please see section 6.12 “Failure Policy.”

Any student who withdraws from the University must complete a Withdrawal Form available at www.mcgill.cagps/students/registration/forms. Fees will then be refunded according to the conditions outlined in section 6.5 “Course Change Period” and in section 6.7 “Regulations Concerning Withdrawal.”

6.2.9 Late Registration

If you fail to register during the normal registration period, you can register within the period designated by the University for late registration. You will be assessed a late registration fee as listed below:

**Returning Students:** You may register late from Tuesday, July 28 until and including Tuesday, September 1 with the payment of a late registration fee of $50 ($20 for Special Students).

**New, Readmitted, and Returning Students (Fall):** You may register late via Minerva from Wednesday, September 2 until Tuesday, September 15 with the payment of a late registration fee of $100 ($40 for Special Students).

**New and Readmitted Students (Winter):** You may register late via Minerva from Tuesday, January 5 until Tuesday, January 19 with the payment of a late registration fee of $100 ($40 for Special Students).

**Special Late Registration:** If you cannot register online during the late registration period, usually due to late admission, you may receive special permission to register in person. This information is included with your letter of acceptance.

6.3 Course Information

6.3.1 Course Numbering

Each McGill course is assigned a unique seven-character course "number".

**The first four characters (Subject Code)** refer to the unit offering the course.

These codes were implemented in September 2002, replacing the three-number Teaching Unit Codes previously used. A complete list of Teaching Unit Codes and their Subject Code equivalents can be found on the web at www.mcgill.ca/student-records/transcripts.

**The three numbers following the Subject Code** refer to the course itself, with the first of these indicating the level of the course.

- Courses numbered at the 100, 200, 300, and 400 levels are intended for undergraduate students. In most programs
courses at the 300 level and 400 level are normally taken in the student’s last two years.

- Courses at the 300 level are upper-level undergraduate courses intended for graduate students, but may also be open to qualified senior undergraduate students.
- Courses at the 600 and 700 level are intended for graduate students only.

Two additional characters (D1, D2, N1, N2, J1, J2, J3) at the end of the seven-character course number identifies multi-term courses.

6.3.2 Multi-term Courses

Most courses at McGill are single term (Fall or Winter or Summer) courses with final grades issued and any credits earned recorded at the end of that term. Single term courses are identified by a seven-character course number.

A unit may, however, decide that the material to be presented cannot be divided into single term courses or it is preferable that the work to be done is carried out over two, or three, terms. Under such circumstances, courses are identified by a two-character extension of the course number.

In some cases, the same course may be offered in various ways: as a single term and/or in one or more multi-term versions. The course content and credit weight is equivalent in all modes, the only difference being the scheduling, and students cannot obtain credit for more than one version.

Courses with numbers ending in D1 and D2 are taught in two consecutive terms (most commonly Fall and Winter). Students must register for the same section of both the D1 and D2 components. When registering for a Fall term D1 course on Minerva, the student will automatically be registered for the Winter term D2 portion. No credit will be given unless both components (D1 and D2) are successfully completed in consecutive terms, e.g., Fall 2009 and Winter 2010.

Courses with numbers ending in N1 and N2 are taught in two non-consecutive terms (Winter and Fall). Students must register for the same section of both the N1 and N2 components. No credit will be given unless both components (N1 and N2) are successfully completed within a twelve (12) month period.

Courses with numbers ending in J1, J2 and J3 are taught over three consecutive terms. Students must register for the same section of all three components (J1, J2, J3). No credit will be given unless all three components are successfully completed.

**IMPORTANT CONDITIONS FOR MULTI-TERM COURSES**

1. Students must be registered for each component of the multi-term course. Students must ensure that they are registered in the same section in each term of the multi-term course.

2. Students must successfully complete each component in sequence as set out in the multi-term course. Credit is granted only at the end of the multi-term course; no credit is given for partial completion.

6.3.3 Course Terminology

**Prerequisite:** Course A is prerequisite to course B if a satisfactory pass in course A is required for admission to course B. It is the responsibility of the student to check prerequisites.

**Corequisite:** Course A is corequisite to course B if course A must be taken concurrently with (or may have been taken prior to) course B.

**Credits:** The credit weight of each course is indicated in parentheses beside the course title. For D1 and D2 courses the credit weight is indicated after the course number.

**COURSE NOMENCLATURE IN PROGRAM DESCRIPTIONS:**

**Required Course:** Courses absolutely required in a program. All students in that program must take this (these) course(s) unless they are granted exemption(s).

**Complementary Course:** Courses selected from a restricted list, a particular subject area, or a discipline. In some programs, students must include a number of these in order to meet program requirements.

**Note:** Complementary courses are not electives. The difference between Complementary courses and Required courses is that Complementary courses offer an element of choice, however small that choice may be. Students may choose from the two (or more) courses specified within Complementary Course segment(s) of a program description, but ONLY from those.

**Elective course:** Courses chosen freely (with advice and approval of the Graduate Program Director and GPS).

6.3.4 Class Schedule and Course Catalog

Class Schedule for the upcoming Fall and Winter terms normally becomes available in mid-March at www.mcgill.ca/courses. The Summer term schedule is normally published in January. Class Schedule includes the days and times when courses are offered, class locations, names of instructors, and related information. You can also access the Calendar entries of scheduled courses by clicking the CRN (course reference number) that appears with each course section shown in Class Schedule.

You should make a note of any preregistration requirements for a course, such as placement tests or departmental approval/permission required.

Class Schedule information is subject to change and is updated as courses are added, cancelled, rescheduled or relocated. It is your responsibility to consult Class Schedule at the time of registration, and again before classes begin, to ensure that changes have not caused conflicts in your schedule.

6.4 Summer Studies

Registration regulations may change for Summer 2010. Detailed information about summer registration will also be available in March 2010 at www.mcgill.ca/gps/students/registration.

Graduate courses are available in some subject areas during the summer and the **Summer Studies Calendar** should be consulted for a complete listing of undergraduate and graduate-level courses.

Students doing graduate work in Education are strongly advised to enrol in summer studies and many programs can only be completed by participation in summer studies.

Registration for courses for graduate students takes place via Minerva for the Summer session. It is the responsibility of the student to register for courses within the deadlines, after completing a Minerva Course Selection Form and obtaining departmental approval.

Students in thesis programs, who pay fees on a per term basis and who have already paid full-time tuition fees during the preceding year are not required to pay for required courses taken in the summer. Students in non-thesis programs will be charged fees for courses taken in the summer. **Registration for “summer studies” should not be confused with registration for a Summer term which has been discussed previously in section 6.2.3 “Summer Registration.”**

Many summer courses have limited enrolment and students are advised to register for such courses as early as possible. Graduate students intending to register for restricted undergraduate courses MUST COME IN PERSON to Graduate and Postdoctoral Studies with an approved “Add Undergraduate Course Form” available at www.mcgill.ca/gps/students/registration/forms, where the course will be added if there is space available in the course.

Please consult the **Summer Studies Calendar** for specific information on course dates and times, available at www.mcgill.ca/summer.

6.5 Course Change Period

During the initial Registration Periods, (see section 6.2 “Registration”), you may make changes to your course registrations (add or
drop courses), subject to the requirements and restrictions of your program and individual courses.

The Course Change deadline coincides with the deadline for late registration. Please see section 2 “Important Dates 2009-2010”.

If you are registered in the Fall term, you may add and drop Winter term courses throughout the Fall term until the Winter term deadline for course change/late registration.

After the Course Change deadline, you may add courses only with written permission of the instructor and your department, and the approval of GPS.

6.6 Auditing of Courses
McGill does not permit auditing of courses.

6.7 Regulations Concerning Withdrawal

6.7.1 Regulations Concerning Course Withdrawal
After the Course Change deadline in the Fall and Winter terms, there is a period of a few days during which you may withdraw, with a grade of W and full refund of course fees.

After the Withdrawal (with refund) deadline, there is a period during which withdrawal from a course will also result in a grade of W but no course fees will be refunded.

Courses that begin in the Fall Term
Deadline for withdrawal (grade of W) with refund: Sunday, September 20, 2009

- Single-term courses: Sunday, October 18, 2009
- Multi-term courses that begin in Fall term: Tuesday, January 19, 2010

Courses that begin in the Winter Term
Deadline for withdrawal (grade of W) with refund: Sunday, January 24, 2010

- Single-term courses: Sunday, February 14, 2010
- Multi-term courses that begin in Winter term: Saturday, May 15, 2010*

* Note that if you are in multi-term courses with course numbers ending in N1 and N2 (course begins in the Winter term, skips the Summer term, and is completed in the subsequent Fall term) you may withdraw after May 15 and until the end of the Fall term Course Change period by contacting your faculty student affairs office.

After the withdrawal (without refund) deadline but before the end of term, and only under exceptional circumstances, you may be granted permission to withdraw from a course. Permission will not be granted merely because you are doing unsatisfactory work. A grade of W or WF, as appropriate, will appear on your transcript but will not be calculated in your GPA. For further information, consult your faculty student affairs office.

Note:
1. To withdraw from required or complementary courses after the withdrawal (without refund) deadline, you may need to obtain permission from your adviser, and you must fill out and submit a course withdrawal form, available from your faculty student affairs office. Additional restrictions for Music courses are indicated in the Schulich School of Music section of the Undergraduate Programs Calendar, available at www.mcgill.ca/courses.

2. If you are registered in the Schulich School of Music section of the Undergraduate Programs Calendar, available at www.mcgill.ca/courses.

3. Fee refunds, if any, will be in accordance with section 8.9 “Fees and Withdrawal from the University”.

6.7.2 Regulations Concerning University Withdrawal
If you are considering University withdrawal, you are strongly urged to consult with your adviser and your student affairs office before making a final decision.

Student’s Responsibility
It is solely your responsibility to initiate University withdrawal. Neither notification of the course instructor nor discontinuing class attendance is sufficient. The date the request for withdrawal is submitted to GPS is the official date of withdrawal, even if you had stopped attending lectures earlier.

6.7.3 Deadlines for University Withdrawal
If you decide not to attend the term(s) in which you are registered, you must officially withdraw from the University within the deadlines indicated. See Withdrawal (W) deadline dates in the “Important Dates 2009-2010”, section 2. If you drop your last Fall or Winter course by the end of the add/drop period of that term you are withdrawn from the University. To return to your studies you must follow the procedures for readmission.

To withdraw from the University by the deadlines indicated below, you must drop or withdraw from all courses on Minerva.

Fall Term:
Deadline for University withdrawal with refund (minus $100 for returning and $200 for new students): Sunday, September 20, 2009
Deadline for University withdrawal without refund: Sunday, October 18, 2009

Winter Term:
Deadline for University withdrawal with refund (minus $100 for returning and $200 for new students): Sunday, January 24, 2010
Deadline for University withdrawal without refund: Sunday, February 14, 2010

If you are blocked from dropping or withdrawing from your last course on Minerva, you are required to contact your student affairs office, which will supply any forms necessary to complete the University withdrawal as long as you have not missed the deadline for University withdrawal.

Special Note for Graduate Students: A Withdrawal Form, available at www.mcgill.ca/gps/students/registration/forms, must be submitted to GPS by the withdrawal deadlines indicated.

6.7.4 Consequences of University Withdrawal
Fee refunds, if any, for the term in which you withdraw will be according to section 8.9 “Fees and Withdrawal from the University”.

Upon withdrawal, you must return your ID card to the University as stated in section 6.20 “Identification (ID) Cards”.

If you withdraw from the University and want to re-register in a subsequent term, you must follow the procedures for readmission. See section 5.1 “Application for Admission” for more details.

If you withdraw from the University during the Fall term you are considered withdrawn from the entire academic year, regardless of whether you dropped Winter term courses. To return for the Winter term, follow the procedures for readmission.

6.8 Grading and Grade Point Averages (GPA)
Classification of Marks:
Courses can be graded either by letter grades or in percentages, but the official grade in each course is the letter grade.

Since Fall 2002, the University has only used letter grades on transcripts and verification forms.

Grades A through B- represent satisfactory passes, and F a failure. Certain courses have been approved for Pass/Fail (P/F) grading. Students must obtain grades of B- or better in courses used to fulfill program requirements.
Grades | Grade Points | Numerical Scale of Marks
--- | --- | ---
A | 4.0 | 85 - 100%
A- | 3.7 | 80 - 84%
B+ | 3.3 | 75 - 79%
B | 3.0 | 70 - 74%
B- | 2.7 | 65 - 69%
F (Fail) | 0 | 0 - 64%

The University assigns grade points to letter grades according to the table above. Your academic standing is determined by a grade point average (GPA), which is calculated by dividing the sum of the course credit, times the grade points by the total course GPA credits. The result is not rounded up to the nearest decimal point.

GPA credits are the credits of courses with grades that are assigned grade points.

\[
GPA = \frac{\sum (\text{course credit} \times \text{grade points})}{\sum (\text{GPA course credits})}
\]

The term grade point average (TGPA) is the GPA for a given term calculated using all the applicable courses at the same level in that term. The cumulative grade point average (CGPA) is the GPA calculated using your entire record of applicable courses at McGill at the same level; if you change levels, e.g., from master's to doctoral, the CGPA starts again.

This policy took effect in January 2003. For students with academic information prior to Fall 2002, who are registered in a different program or in a different level post-Fall 2002, the transcript displays a special message regarding the CGPA restarting.

If you repeat courses, all results are included in the GPA calculation. Therefore, grades of F or J continue to be used in the CGPA calculation even after you repeat the course or if you take a supplemental examination.

Other Grades:

**IP** | in progress; (Master's Thesis Courses Only)

**P** | pass; Pass/Fail grading is restricted to certain seminars, examinations and projects only. In such cases all grades in these courses are recorded as either Pass or Fail. Not calculated in TGPA or CGPA.

**HH** | to be continued; the use of this grade is reserved for major research projects, monographs and comprehensive examinations as designated for graduate studies.

**J** | unexcused absence (failed); the student is registered for a course but does not write the final examination or do other required work; calculated as a failure in the TGPA and CGPA.

**K** | incomplete; deadline extended for submission of work in a course or for the completion of a program requirement such as a Ph.D. language examination (maximum four months). (Need a K contract signed.)

**KF** | incomplete/failed; failed to meet the extended deadline for submission of work in a course or for the completion of a program requirement; calculated as a failure in TGPA and CGPA.

**KK** | completion requirement waived. Not calculated in TGPA or CGPA. This is used in exceptional cases only, with the approval of the Director of Graduate and Postdoctoral Studies. Not calculated in TGPA or CGPA.

**KE or K** | further extension granted with the approval of the Director of Graduate and Postdoctoral Studies (maximum two years.) (Need a K contract signed.)

**L** | deferred; for students whose final examinations or papers have been deferred, for reasons such as illness, at the time of the examination. The "L" grade must be cleared as soon as possible (maximum four months).

A dated medical certificate or appropriate document recommending a deferral must be submitted to Graduate and Postdoctoral Studies with a departmental recommendation for a deferral before or immediately after the examination. In particular, such recommendations will not be considered if medical reasons are brought forth after a grade is assigned.

By commencing to write any examination, the student waives the right to plead medical causes for deferral or permission to write a supplemental examination, unless the medical problem occurs in the course of the examination and is documented by examination authorities.

**LE or L** | further deferral; permitted to defer examination for more than the normal period.

**NA or & &** | grade not yet available.

**NR** | no grade reported by the instructor (recorded by the Registrar).

**Q** | course continued in next term.

**Satisfactory/ Unsatisfactory** | Not used for graduate students.

**W** | withdrew with approval; a course dropped, with permission, after the Course Change deadline; not calculated in TGPA or CGPA.

**WF** | withdrew failing; a course dropped, with special permission in an exceptional case, after faculty deadline for withdrawal from course, the student's performance in the course at that stage being on the level of an F; not calculated in TGPA or CGPA. (Not used by Music and Graduate Students.)

**WL** | faculty permission to withdraw from a deferred examination (approved by GPS); not calculated in TGPA or CGPA.

**W-- or --** | no grade; student withdrew from the University, not calculated in TGPA or CGPA.
6.9 Unexcused Absences

All students who miss a final exam are given a J grade. The student can request a deferred exam, if the student has the appropriate reasons and documentation as soon as possible.

Students wishing to appeal a J grade should write to the Associate Dean (GPS) or Director (GPS).

6.10 Verification of Student Record

6.10.1 Unofficial Transcripts

Subject to section 6.11, “Changes to Student Records after Normal Deadlines”, you are responsible for verifying your academic record on Minerva using the unofficial transcript to ensure that you are registered in the proper courses, and that the correct program information and expected term of graduation appear on your record.

If you are graduating, verify your record on Minerva before the end of your final term to ensure that the correct expected graduation term appears on your unofficial transcript; if not, you may be overlooked for graduation. You should direct any questions or problems with your record to your Graduate Program Director or directly to GPS.

6.11 Changes to Student Records after Normal Deadlines

6.11.1 Student Record Changes

Student record changes include the following: course add or course drop, course withdrawal, university withdrawal, program change (including changing minors or concentrations).

6.11.2 Registrar Deadlines

Fall term - January 31
Winter term - June 1
Summer term - October 1

6.11.3 Before Registrar Deadlines

For record changes after the normal deadlines published in the Calendar, but before the Registrar deadlines above, you must make a request in writing to the Associate Dean of your faculty or Director of Graduate and Postdoctoral Studies (GPS) for graduate students, clearly explaining why you could not request the change before these dates. The Associate Dean or Director will review your request and make a decision. If your request is approved, the change is processed according to existing faculty and Enrolment Services student record procedures.

6.11.4 After Registrar Deadlines

The University does not normally consider a change requested after the Registrar deadlines listed above. In situations where there are "extraordinary personal" or "extraordinary academic" circumstances that could not have been foreseen prior to these deadlines, you may formally request a student record change from the Associate Dean of your faculty or Associate Dean of Graduate and Postdoctoral Studies (GPS) for graduate students. If your Associate Dean approves the request, the change will be processed according to faculty and Enrolment Services student record procedures. For all changes other than grade changes, the faculty will file full documentation that supports the extraordinary circumstances with Enrolment Services.

6.11.5 Fee Assessment Consequences

When a change to your student record is made, the revised fee assessment appears on your next fee statement.

If you want to contest the fee assessment, you must make a written request to Enrolment Services. Enrolment Services reviews the extraordinary circumstances described in the supporting documentation provided by your faculty, and consults with the Student Accounts Office if necessary, to decide whether or not to consider the request. Enrolment Services then sends you a letter explaining the decision.

6.11.6 Student’s Citizenship and/or Immigration or Fee Exemption Status

Note that your faculty or GPS does not handle changes related to your citizenship and/or immigration or fee exemption status; please see section 6.19, “Legal Documents”.

6.12 Failure Policy

Students who have failed one course required by their department while registered as a graduate student may automatically write one supplemental examination, if the departmental policy permits, or retake that course or substitute an equivalent course. For the purposes of this policy, "required course" includes either a course required by the student’s program of study, or a course that has been designated by the department for an individual student’s program of study. Students with any further failures in that course, including the supplemental, or a failure in any other course, will be required to withdraw from their program of study. When a student retakes a course, he/she is required to pay the fee charged for the course in question. Ph.D. students and master’s students in thesis programs can also be required to withdraw from their program of study for documented lack of performance in research.

The failure policy does not pertain to the failure of comprehensive examinations, doctoral oral defenses, or thesis failures. In the case of a failed thesis or defense, the Thesis Failure Policy, detailed in the Thesis Guidelines, applies. In the case of a failed comprehensive examination, the Ph.D. Comprehensives Policy applies.

Senate, October 11, 2000.
Revised – GPS Council, February 10, 2003

Procedure to follow in cases of failure:

The procedure in cases of initial failure is as follows: the failing grade is to be recorded and a letter sent to the Graduate and Postdoctoral Studies Office indicating that a supplemental examination is to be given under the Failure Policy. If the supplemental is passed, the second grade should be submitted. The same procedure applies for a recommendation of a retake or a substitution.

In the event of a failure of a supplemental exam, the department should request, in writing, that the student withdraw (with a copy of said letter forwarded to GPS). Similarly, in the event of a failure in a second course, a written request for withdrawal (copied to GPS) should be sent to the student.

Note: A student in a graduate program who has failed one course while being a Special Student in a graduate studies will have this failure count as a first failure in a related graduate program. Any further failure will require withdrawal from the program of study.

6.13 Language Policy

The main language of instruction at McGill is English. You have the right to write essays, examinations, and theses in English or in French except in courses where knowledge of a language is one of the objectives of the course.

If you need to improve your English skills, you should take an intensive course in English as a Second Language before or at the start of your studies. Information concerning second language course offerings can be found in the Faculty of Arts section of the Undergraduate Programs Calendar and in the Summer Studies and Continuing Education Calendars. There are special language requirements for Faculty of Education students (see section 6.2.5 “Courses Which Cannot Be Taken for Credit in a Graduate Program Unless They Have Formally Been Approved for a Specific Program”).
6.14 Regulations Concerning Theses

The thesis submission guidelines contain important information regarding procedures and deadlines. Students who are in the process of writing a thesis must consult these thesis submission guidelines in order to adhere to University regulations concerning the submission of a thesis. Thesis submission guidelines and all the forms required for thesis submission are posted on the web at www.mcgill.ca/gps.

Forms and guidelines are updated as procedures change. Students should keep informed of these changes by referring to the website.

Dates of submission of theses, convocations, etc. are listed in section 2 “Important Dates 2009-2010” and are available on the web at www.mcgill.ca/students-information/dates.

6.15 Graduation

In order to graduate, you must complete faculty and program requirements. It is your responsibility to meet all faculty and program requirements before graduation.

The University sends statements of account and all other correspondence directly to students. You retain full control over who has access to your records or accounts; however, officers and members of the University staff also have access to relevant parts of your records for recognized and legitimate use. The University does not send progress reports or any other information to your parents and/or sponsors unless you specifically request it in writing.

You should contact your adviser (Music students should contact the Senior Student Adviser; Graduate students should contact the Graduate Program Director) early in the graduating year to make sure you will meet your program requirements by graduation time.

6.15.1 Apply to Graduate

Most undergraduate students and non-thesis graduate students (master's, certificates, diplomas) must use Minerva to apply to graduate. It is your responsibility to inform McGill of your intention to graduate.

Deadlines:

- Fall term graduation (courses completed in December for June convocation): You must apply on Minerva by the end of November.
- Winter term graduation (courses completed in April for June convocation): You must apply on Minerva by the end of February.
- Summer term graduation (courses completed by August for October convocation): You must apply on Minerva by the end of March.

If you miss one of these deadlines, you must follow the procedures at www.mcgill.ca/gps/students/thesis/nonthesis.

The Application for Graduation is available on Minerva for students in non-thesis programs who have registered for their final year. For more information on how to apply on Minerva, go to www.mcgill.ca/minerva-students/records/graduation.

Graduation Fee

All students are charged a compulsory transcripts and diploma charge in each term of registration. This will entitle students to order transcripts free of charge as well as cover the costs of graduation.

6.15.2 Graduation Approval Query

As a graduating student you can view the status of your graduation record on Minerva during the Faculty review and approval process (go to Student Records > Graduation Approval Query). The Graduation Approval Query form becomes available to graduating students approximately three to four weeks before the Degree Granted notation is updated on their records.

If you have met all requirements for graduation, your student record on Minerva will display the Degree Granted notation at the appropriate time:

- Late February, for Fall term graduation (Convocation in Spring).
- Late May, for Winter term graduation (Convocation in Spring).
- Late October, for Summer term graduation (Convocation in Fall).

See www.mcgill.ca/convocations for information regarding convocation ceremonies.

6.15.3 Replacement Diploma

If your diploma was lost, damaged, or the name on the diploma should be changed, you can request a replacement diploma. You must send a written request plus a certified cheque or money order for CDN $60, payable to McGill University. You should refer to the sections below to determine which situation applies to you. Send your request to:

Enrolment Services

Duplicate Diploma Request

McGill University

James Administration Building, Room 205

Montreal, QC H3A 2T5

Email: registration@mcgill.ca

Please note that requests made on behalf of a student must be accompanied by a signed letter of authorization from the student.

To replace a lost diploma: You must provide a sworn affidavit from a notary, a lawyer or a commissioner of oaths certifying that the diploma is lost. The affidavit must include: your full name; student number; address; phone number; date of birth; degree granted/year granted; and reason for a replacement diploma.

To replace a damaged diploma or change the name on the diploma: You must send or deliver the original diploma, and your letter must include the following information: full name; student number; address; phone number; date of birth; reason for a replacement diploma; and any corrections, additions or deletions.

For name changes: you must include clear and complete photocopies of legal documents supporting your name change request. Please see section 6.21 “Name” for the list of acceptable documents. Note that the name change must be processed in the University system before a duplicate diploma can be issued.

To request certified copies of a diploma: McGill provides only one original diploma per student. However, you may obtain certified copies of your diploma. Simply photocopy your original diploma on 8.5” x 11” paper in landscape mode, making certain to reduce it so that all seals and signatures are visible. Enrolment Services will certify as many copies as required at no charge. A cover letter bearing your signature and including your full name, student number, address and phone number is required for mail or fax requests. Note that certified copies of your diploma are not sent by fax or email.

To request a translation of a diploma: McGill can provide you certified English or French translations of your diploma as required, free of charge. Please send us a written request specifying the degree to be translated and how many copies you need. You should ensure to include your complete name, address, date of birth and signature. You must allow at least a week for processing and mailing. Note that translated diplomas are not sent by fax or email.

6.15.4 Dean's Honour List

Only graduate students who have completed their program within the University’s time limitation for their program are considered for the Dean’s Honour List designation.

The criteria for inclusion in the Dean’s Honour List is as follows:

Master’s Thesis Candidates:

Truly outstanding student recommended by the department.

6.16 Policy Concerning Access to Records

The University sends statements of account and all other correspondence directly to students. You retain full control over who has access to your records or accounts; however, officers and members of the University staff also have access to relevant parts of your records for recognized and legitimate use. The University does not send progress reports or any other information to your parents and/or sponsors unless you specifically request it in writing.
In accordance with Quebec’s Act Respecting Access to Documents held by Public Bodies and the Protection of Personal Information (the "Access Act"), personal information, including transcripts of academic records, may be released only with the student's authorization. When you apply to McGill, you authorize the University to release certain personal information (name, address, telephone number, email address, date of birth, program and student status) to specific persons and bodies.

The following persons and bodies are included in your information release authorization:

a. Libraries of other Quebec universities with which McGill has reciprocal borrowing agreements (ID number and bar code may also be disclosed to those libraries).

b. Ministère de l'Immigration et des Communautés culturelles and/or the Régie de l'assurance-maladie du Québec and the Ministère de l'Éducation, du Loisir et du Sport (MELS).

c. The appropriate authorities involved with the external or internal funding of your student fees (financial records may also be disclosed to those authorities).

d. The Association of Universities and Colleges of Canada.

e. The Association of Registrars of Universities and Colleges of Canada and the Conférence des recteurs et des principaux des universités du Québec, or the member institutions of these organizations, for the purpose of admissions operations and the production of statistics.

f. The school(s) or college(s) that you attended.

g. Students and alumni who have volunteered to speak with admitted students.

h. Student Associations recognized by McGill University for the student category(ies) to which you belong.

i. The McGill Alumni Association.

j. Professional bodies or corporations (e.g., engineers, dentists).

k. McGill Network and Communications Services for the purposes of listing your McGill email address in an online email directory.

If you do not want to authorize the University to disclose personal information to the organizations mentioned above in h, i, j and k, you must complete and submit an Opposition Form, available at Enrolment Services.

6.17 Transcript of Academic Record

6.17.1 Unofficial Transcripts

If you require a copy of your student record, access Minerva to view and print an unofficial transcript. This applies to records from 1976 to the present. For pre-1976 records, you must order an official transcript.

6.17.2 Official Transcripts

Use Minerva to order an official transcript at Student Menu > Student Records Menu > Request Printed/Official Transcript. If you cannot access Minerva, fill out the Request for Release of Official Document form available online at www.mcgill.ca/student-records/transcripts or in person at Enrolment Services (address below), and submit it by mail, by fax, or in person. Note that the form must be signed by the student. To protect privacy, we do not accept telephone or email requests.

Enrolment Services
James Administration Building
845 Sherbrooke Street West, Room 205
Montreal, QC H3A 2T5
Fax: 514-398-8939

6.17.3 General Information

Transcripts are free of charge.

The University sends official transcripts directly to the addresses provided by the student. If you intend to deliver the transcript to another institution yourself, you can request to receive it in a sealed envelope.

Requests are normally processed in 3 to 5 working days; transcripts requested at peak times and for pre-1976 records take longer. Enrolment Services is not responsible for transcripts that are lost or delayed in the mail.

The University issues only complete transcripts that record all attempted work and final results obtained in any and all programs. Under no circumstances does the University issue partial transcripts.

Official transcripts are NOT issued for students registered on or after September 2001 who have failed to provide the information and/or documents necessary to obtain or verify their Permanent Code.

Transcripts are not issued if you owe fees or fines over $30.

The University prints official transcripts on secure paper that cannot be copied.

6.17.4 Course Numbering on the Transcript

Prior to September 2002, course numbers had a seven-character designation beginning with the three-number code for the teaching unit/department. The next three digits specified the course, with the first of these indicating its level. The final character was a letter indicating the term, or terms, during which the course was offered. For example:

- 107-200A = Philosophy (107) course (200) in Fall term (A);
- 301-202B = Architecture (301) course (202) in Winter term (B);
- 154-230D = Economics (154) course (230) extending for two terms, Fall and Winter (D).

A list of the former Teaching Unit Codes and their Subject Code equivalents is available at www.mcgill.ca/student-records/transcripts.

6.18 Academic Integrity

When submitting work in your courses, you must understand the meaning and consequences of plagiarism and cheating, which are extremely serious academic offences. If you have any doubt as to what might be considered plagiarism when you are preparing an essay or term paper, you should consult the course instructor to obtain appropriate guidelines. You should also consult the student guide to the meaning of plagiarism on the Academic Integrity website at www.mcgill.ca/integrity, where you will find links to instructional tutorials and strategies to prevent cheating. The Code of Student Conduct and Disciplinary Procedures includes sections on plagiarism and cheating. You can find the Code in the Handbook on Student Rights and Responsibilities, available through the Academic Integrity website or at www.mcgill.ca/deanofstudents/rights.

The possession or use of unauthorized materials in any test or examination constitutes cheating. Responses on multiple-choice exams are normally checked by the Exam Security Computer Monitoring program. The program detects pairs of students with unusually similar answer patterns on multiple-choice exams. Data generated by this program can be used as admissible evidence in an investigation of a possible violation under Section 16 of the Code of Student Conduct and Disciplinary Procedures.

The Office of the Dean of Students administers the academic integrity process as described in the Handbook on Student Rights and Responsibilities.

6.19 Legal Documents

6.19.1 Why Does McGill Collect Legal Documents from You?

Tuition fees at McGill vary depending on whether you have provided us with proof that you are a Quebec student, a Canadian out-of-province student, or an international student, as per section 6.19.2, “What Documents Does McGill Need from You?”.

Some of the documents McGill requests from you help us obtain your Permanent Code from the Government of Quebec. This unique 12-character code, is issued by the Quebec Ministère de
6.19.2 What Documents Does McGill Need from You?

Follow the instructions in the first row of this table that apply to you. Send clear, legible copies of documents (not originals).

### Quebec and Canadian Out-of-Province Students

| You have applied to McGill directly from CEGEP or you already have a student record at McGill | Usually no documents are required for your Canadian and/or Quebec status, based on McGill’s records or as confirmed by the Quebec Ministère de l’Éducation, du Loisir et du Sport (MELS) |
| You have applied to McGill from another Quebec university | Canadian birth certificate; or Canadian citizenship card (both sides); or Certificate of Indian status card; or Makkivik Society card; or Record of Permanent Resident status (note 3) |
| For your Quebec residency status, usually no documents are required, unless McGill cannot confirm this from the Quebec Ministère de l’Éducation, du Loisir et du Sport (MELS) |
| You were born in Quebec | Quebec birth certificate (note 1 and 5) |
| You were born (or became a Landed Immigrant) in a Canadian province other than Quebec | Canadian birth certificate; or Canadian citizenship card (both sides); or Certificate of Indian status card; or Makkivik Society card; or Record of Permanent Resident status (note 3) |
| You are a Quebec resident through one of the other situations outlined by the Quebec Ministère de l’Éducation, du Loisir et du Sport (MELS) | Canadian birth certificate; or Canadian citizenship card (both sides); or Certificate of Indian status card; or Makkivik Society card; or Record of Permanent Resident status (note 3) |
| | Permanent Code Data Form (note 2 and 6) |
| | Attestation of Residency in Quebec Form (note 6) |
| | Other supporting documents, depending on which situation you checked on the above Attestation of Residency Form |

### International Students

| You will be in Canada for less than 6 months (i.e. for only one academic semester) | Visitors Permit issued by Citizenship and Immigration Canada at your port of entry into Canada |
| | Photo page of your passport and the page stamped by Citizenship and Immigration Canada at your port of entry |
| | Permanent Code Data Form (note 2 and 6) |
| You will be in Canada for more than 6 months (i.e. for two or more consecutive academic semesters) | Certificate of Acceptance of Quebec (CAQ) |
| | Permanent Code Data Form (note 2 and 6) |
| | Study Permit issued by Immigration Canada (note 4) |

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**Note 1:** You may alternatively provide your Quebec baptismal certificate; it was issued prior to January 1, 1994, and clearly shows where you were born and that your baptism in Quebec occurred no more than four months after your date of birth.

**Note 2:** Your signed Permanent Code Data Form is usually required. If the names of your parents appear on your birth certificate, or if you have already provided McGill with your Permanent Code, you do not need to supply this form.

**Note 3:** Your Canadian Permanent Resident status can be proved by a copy of your Immigration Canada IMM 5292 document together with your Canadian Permanent Resident card (copy of both sides required). Alternatively, you may provide your IMM 1000 document along with your Permanent Resident card (copy of both sides required).

**Note 4:** If you are a refugee, you should instead provide your Convention Refugee status document.

**Note 5:** Usually McGill needs your birth certificate to prove your place of birth in Quebec. If you already have a valid Quebec Permanent Code, but McGill is still charging you Canadian fees, McGill will accept as proof that you qualify for Quebec residency a copy of your Canadian passport that indicates your birth place as being within the province of Quebec.

**Note 6:** You can find links to download and print the Permanent Code Data and Attestation of Quebec Residency forms at www.mcgill.ca/legaldocuments/forms.

### Fee Exemptions

Students in certain categories may be eligible to claim an exemption from the international rate of tuition fees according to the regulations set by the Quebec Ministère de l’Éducation, du Loisir et du Sport (MELS).

If you are eligible for one of the exemption categories you are assessed at the Quebec rate of tuition. You can find a list of categories and the required application form at www.mcgill.ca/student-records/fees/exemption and also at Enrolment Services. An exemption will not be granted unless you submit the application form along with your supporting documents to Enrolment Services.

### 6.19.3 Has McGill Received Your Documents?

**Quebec/Canadian/International Fees**

Once McGill has received your documents, it usually takes one week to process them and update your file accordingly.

- Check your tuition status on the Minerva student accounts menu: Student Menu > Student Accounts Menu > View your Tuition and Legal Status.
- Check the phrase: Fees currently calculated according to rules for... This will tell you if you are assessed as: an international student, a Canadian student, or a Quebec student.
- Electronic billing is the official means of delivering fee statements to all students; you may view your e-bill on Minerva. For more information, see the following website: www.mcgill.ca/student-accounts/e-bill.

If you do not agree with your assessment, notify McGill right away. If you provide additional documentation in support of your file after the last day of classes for the given term, McGill cannot accept changes or offer you a lower tuition rate for that term.

**Permanent Code**

The Quebec Ministère de l’Éducation, du Loisir et du Sport (MELS) usually takes one to four weeks to verify or issue your Permanent Code.

- Check your Permanent Code on Minerva: Personal Menu > Name Change or alternately via Student Menu > Student Accounts Menu > View Tuition Fee and Legal Status. If your 12-character Permanent Code appears there, your documents are in order. If not, you have not yet provided McGill with your documents listed above or the Quebec Ministère de l’Éducation, du Loisir et du Sport (MELS) has not yet
confirmed that your documents are sufficient to create a Permanent Code.

6.19.4 What Are the Consequences of Not Providing Your Documents?

McGill must receive all proofs of citizenship, requests for Quebec residency, international fee exemptions, and immigration status changes by the end of the last day of classes of a current term for them to take effect for that term. All requests received after the last day of classes will be processed but your fees will only be lowered for the following term.

McGill cannot issue you an ID card until all of your documents have been received. Your ID card is essential to use many services on campus, and to take your final exams.

If your Permanent Code is not issued by October 15 (Fall term) or February 15 (Winter term), a hold will be added to your record until McGill has received the necessary documents. This hold will prevent you from registering or dropping any courses and from obtaining your official transcript. If you are registered in one term or in a one-year program, the University may put a hold on your record earlier in the term.

If your tuition fees are reduced because of the document review process, McGill will waive the difference on any accumulated late payment or interest charges.

6.19.5 Where Do I Send my Documents?

You must send in all your documents after you have been accepted to McGill but before your classes begin. Do not send originals. Email, fax or mail clear and legible copies of your documents.

Write your student ID on the documents so that McGill can match them to your record. The sooner you submit your documents, the sooner the University can update your status and ensure that your record is in order.

By Email:

Follow these steps to submit your legal documents electronically:

1. Save the attached file in an accepted format:
   - Standard PDF (.pdf) - encrypted PDFs will not be accepted.
   - Tagged image format (.tiff, .tif; for scans).

Ensure that you save your documents properly in one of the following formats:

- Tagged image format (.tiff, .tif; for scans).
- Standard PDF (.pdf) - encrypted PDFs will not be accepted.

2. Ensure that the resolution used is at least 300 dpi (dots per inch) for an electronic replica (scan) of documentation (e.g., a scan of your birth certificate). The preferred file size is 100KB per image.

3. Address your email to legaldocumentation@mcgill.ca and attach your relevant scanned document(s). Attach the file(s) to your email; do not include the documents in the body of your email.

4. Put your First Name, Last Name, and McGill ID number in the subject line of your email.

Note: Individual email size (including your attachments) should not exceed 5 MB (5120 KB).

By Mail:

Enrolment Services
Documentation Centre
688 Sherbrooke Street West, Suite 760
Montreal, QC H3A 3R1 CANADA

By Fax:

514-398-3227

In Person or by Courier:

Enrolment Services
James Administration Building, Room 205
845 Sherbrooke Street West
Montreal, QC H3A 2T5 CANADA

If there is a problem with your documents, contact:

Telephone: 514-398-4474
Email: admissions@mcgill.ca

6.20 Identification (ID) Cards

As a student registered at McGill you are required to present an ID card to write examinations, when using library and student services and certain laboratories, and to access many residences.

To receive your ID card, you must be a registered student, and you must present your Permanent Code information and proof of legal status in Canada (for a list of acceptable documents, see section 6.19 “Legal Documents”).

ID cards will not be issued if any of your legal documents are missing.

Note: You must allow at least three hours after you have registered before applying for your ID card.

Apply for your ID card at these times and locations:

<table>
<thead>
<tr>
<th>Quebec CEGEP students:</th>
<th>Enrolment Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuesday, June 9 to Tuesday, Sept. 1, 2009. Open 9:00 a.m. to 5:00 p.m. (Note that we are closed on: Wednesday, June 24 and Wednesday, July 1st and weekends). You are encouraged to come during this period to avoid lineups later in August. No international students can be issued an ID card before August 19.</td>
<td>James Administration Building, Room 205</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Canadian and Quebec students:</th>
<th>Enrolment Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuesday, July 28 to Tuesday, Sept. 1, 2009. Open 9:00 a.m. to 5:00 p.m. (except weekends). You are encouraged to come during this period to avoid lineups later in August. No international students can be issued an ID card before August 19.</td>
<td>James Administration Building Room 205</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>All students, including international students:</th>
<th>Enrolment Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wednesday, August 19 to Friday, August 28, 2009. Open 9:00 a.m. to 5:00 p.m. including Saturday and Sunday, August 22-23.</td>
<td>Lorne M. Trottier Building 3630 University Street</td>
</tr>
</tbody>
</table>

Starting Tuesday, September 1, 2009: Normal office hours.

ID Card Schedule for the Macdonald Campus:

Quebec CEGEP students (newly registered) may obtain an ID card from the Student Affairs Office, Room 106, Laird Hall. Office hours are from 9:00 a.m. to 4:00 p.m., Monday through Thursday and 9:00 a.m. to 3:00 p.m. on Friday throughout the Summer.

Please note that the Student Affairs Office will be closed for the statutory holidays of Wednesday, June 24, and Wednesday, July 1.

Canadian and Quebec Students may obtain an ID card August 3 to 22, from 9:00 a.m. to 4:00 p.m., Monday through Thursday and 10:00 a.m. to 3:00 p.m. on Friday from the Student Affairs Office, Room 106, Laird Hall. If you are unable to obtain your ID card on one of the above dates, you will be able to obtain it during orientation activities the week of August 24.

International Students may obtain an ID card as of August 19, 2009 from the Student Affairs Office, Room 106, Laird Hall.

As of Tuesday, September 1, 2009, you may obtain an ID card from the Macdonald Campus Student Affairs Office during normal office hours.
6.21 Name

6.21.1 Legal Name
This is the name that will appear on your degree, diploma or certificate on graduation, and on your transcript. It is also used by the Quebec Ministère de l'Éducation, du Loisir et du Sport (MELS) to create a Permanent Code.

All students are registered under their legal name as it appears in one of the following documents:
1. Canadian birth certificate.
2. Canadian Immigration Record of Landing (IMM1000 or IMM5292 and Permanent Residence card, both sides).
3. Canadian Immigration Study or Work Permit document.
5. International passport (for Canadians, a Canadian citizenship card is required. Note that a Canadian passport is not acceptable).
6. Letter from international student’s consulate or embassy in Canada.
7. Marriage certificate issued outside of Quebec (translated into English or French by a sworn officer if in another language).

Note that Quebec marriage certificates are only acceptable if issued prior to 1984.

In the case of a variation in the spelling of the name among these documents, the University will use the name on the document that appears first on the above list.

6.21.2 Preferred First Name
You can provide a preferred first name on your application for admission or, once admitted, on Minerva, under the Personal Menu. From the Personal Menu, select the Name Change Form and you will be able to add/modify this field.

Your preferred first name appears on class lists (in parentheses beside your legal name) for use by instructors. Note that your legal name will continue to appear on your transcript and diploma.

6.22 Verification of Name
Verify the accuracy of your name on McGill's student records via Minerva. To do this, go to the Personal Menu > Name Change Form, where you can make minor corrections such as changing case (upper/lower), adding accents and spacing. However, you cannot change the name on your record via Minerva. Requests for such changes must be made by presenting official documents (see section 6.21 “Name”) in person at Enrolment Services, James Administration Building, Room 205.

6.23 Email Communication
All students are assigned a McGill Email Address (usually in the form of firstname.lastname@mail.mcgill.ca) and are given a McGill email mailbox. You can view your McGill Email Address and set your McGill Password on Minerva, under the Personal Menu.

Email sent to your McGill Email Address is an official means of communication between McGill University and its students. As with all official University communications, it is your responsibility to ensure you read and act upon University emails in a timely fashion. If you choose to forward University email to another email mailbox, it is your responsibility to ensure that the alternate email mailbox is valid.

You should read the Code of Conduct for Users of McGill Computing Facilities and the Email Communications with Students policy found under Information Technology on the University Secretariat website at www.mcgill.ca/secretariat/policies/informationtechnology. For more information on email for students, refer to www.mcgill.ca/it and see section 12 “For your Information Technology (IT) needs”.

6.24 Updating Personal Information
It is important to keep your official records up to date, especially your mailing or billing address, because these are used by the University year round. If your address information on file is invalid, incomplete or missing, the University will hold your mail. Once you have provided a valid address, the University will resume sending your mail.

You must update your address(es) and/or telephone number(s) and emergency contact information on Minerva under the Personal Menu.

If you are away from campus and do not have access to the Internet, you can request changes by writing to your student affairs office or to Enrolment Services. Your written request must include your signature.

If you need to change important personal information that requires the University to verify official documents, such as a change to your name or citizenship, or correction of your birth date, you must go in person (as soon as possible) to Enrolment Services, James Administration Building, Room 205. Macdonald Campus students can request changes in person at the Student Affairs Office, Laird Hall, Room 106.

6.25 Authorization, Acknowledgement and Consent
When applying for admission to the University, you are bound by and agree to observe all statutes, rules, regulations, and policies at McGill University and the faculty or faculties to which you may be accepted and registered in, including policies contained in the University Calendars and related fee documents. Your obligation as a student begins with your registration and ends in accordance with the University’s statutes, rules, regulations, and policies.

You should verify all information or statements provided with your application. Incorrect or false information may jeopardize your admission. The University reserves the right to revoke an admission that is granted based on incorrect or false information in an application or supporting documents.

6.26 Proper Use of Computing Facilities
You must comply with the Code of Conduct for Users of McGill Computing Facilities as approved by the University Senate. You can find the Code in the Handbook on Student Rights and Responsibilities.

This Code (or policy) is also posted in the University Secretariat listing of University Policies, Procedures and Guidelines under Information Technology, at www.mcgill.ca/secretariat/policies/informationtechnology.

6.27 Non-Smoking Policy
Quebec law prohibits smoking in public buildings.
6.28 Health Professions - Immunization Requirement

A compulsory immunization program exists at McGill for students in the health professions, including Dietetics. If you are a new student in those programs, you must complete the immunization program well before classes begin. You can find further information on our website at www.mcgill.ca/studenthealth/forms or by calling the Student Health Service at 514-398-6017.

6.29 Health Insurance - International Students

By Senate regulation, all international students (full-time, part-time, half-time, additional session, special, exchange and visiting) and their accompanying dependants who do not have Canadian citizenship or Permanent Resident status must participate in the University's compulsory sickness and accident plan. For enrolment procedures and details on the health insurance plan, consult the International Student Services website. For information concerning rates, see www.mcgill.ca/internationalstudents/health/faq/#3.

All inquiries related to this University policy must be directed to International Student Services.

International Health Insurance
Telephone: 514-398-6012
Email: international.health@mcgill.ca
Website: www.mcgill.ca/internationalstudents/health

6.30 Health Insurance - Canadian Residents

If you are a Canadian student from outside Quebec, you should check with your provincial medicare office to ensure that you have valid health coverage while studying at McGill.

If you are a Canadian student who has been living abroad, you may not be eligible for provincial health insurance coverage. To ensure adequate health insurance coverage, you may enrol in the group plan offered through International Student Services. Please note that this option is available only during the first month of your first semester at McGill.

Graduate students classed as Canadian full-time or additional session/non-thesis extension as well as all postdoctoral candidates are automatically covered by their society's Health and Dental Plan (PGSS). Students without valid Canadian Medicare, please see "International Students": section 7.3. In 2009-2010, this plan costs $591 (single coverage). Students not charged during the Fall term for insurance fees can choose to enrol directly at this plan.

6.31 Special Medical Needs

If you have special medical needs, have your physician submit appropriate information, on a confidential basis, directly to the Student Health Service; see section 7.5 "Student Services – Downtown Campus" for contact information on the Downtown Campus and section 7.6 "Student Services – Macdonald Campus" for Macdonald Campus contact information.

6.32 Minerva

Minerva is McGill's web-based information system serving students, staff and faculty. To access Minerva, go to www.mcgill.ca/minerva and click the Login icon. Once logged in to Minerva, you can:

- View class schedules, including course descriptions and spaces available in course sections.
- Register and make course changes.
- View your unofficial transcript and degree evaluation reports.
- View your Permanent Code, citizenship and Quebec residency status and fee information.

- Update personal information such as address, telephone number and emergency contacts.
- Apply to graduate.
- View graduation status and convocation details.
- View your McGill login information to access the Internet and email.
- Order official transcripts.
- Retrieve tax receipts.
- Submit an online course evaluation.
- Apply to McGill and view your application status.

In addition, students in some faculties can use Minerva to change their major or minor programs, and to apply for an Exchange program.

6.33 myMcGill

McGill's web portal, myMcGill, gives students and staff a personalized interface to the University's information systems. myMcGill offers an integrated web experience with a single sign-on (SSO) to several McGill web systems. This allows you to access multiple McGill systems without being prompted for additional logins. To log into myMcGill, click the myMcGill tab at the top-right corner of the McGill homepage (www.mcgill.ca) or go to http://my.mcgill.ca.

7 Student Services and Information

7.1 Fellowships, Awards and Assistantships

Graduate and Postdoctoral Studies (Fellowships and Awards Section)
James Administration Building, Room 400
845 Sherbrooke Street West
Montreal, QC H3A 2T5
Telephone: 514-398-3990
Fax: 514-398-2626
Email: graduate.fellowships@mcgill.ca
Website: www.mcgill.ca/gps/students (under Fellowships and Awards)
Graduate Fellowships and Awards Calendar: www.mcgill.ca/awards (under Graduate Fellowships and Awards Calendar)

The Fellowships and Awards Section of Graduate and Postdoctoral Studies provides information on 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 on 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 – 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.

Since September 2007, we offer the McGill International Doctoral Awards (MIDAs). All international doctoral students registered full-time at McGill (Ph.D./D.Mus./D.C.L. in years 1 to 4) pay the same tuition as Quebec doctoral students. International students whose international tuition supplement is paid by an external source (e.g., fellowships that include direct payment of tuition and third party billing contracts) will not be eligible for these awards.

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 a country in the list which can be found at
www.mels.gouv.qc.ca/ens-sup/ens-univ/droits_scolarite-A_pays-organisations.pdf are eligible for such exemptions. For more information and the necessary application materials, see this MELS website: www.mels.gouv.qc.ca/ens-sup/ens-univ/coop.asp. The list of organizations where students should apply can be accessed from this website.

Differential fee waivers 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. As of May 2007, summer DFWs are applied primarily to eligible master’s students, while Fall and Winter term DFWs are applied primarily to eligible doctoral students as part of the MIDAs program.

7.2 Student Financial Assistance

Citizens and Permanent Residents of Canada

Need-based student financial aid programs are offered by the Federal/provincial governments. Applications should be submitted directly to the province (or territory) of residence. Application forms are available from the governmental aid authorities as well as the Scholarships and Student Aid Office. Information on governmental student aid and links to sites can be found on McGill’s Financial Aid website at www.mcgill.ca/studentaid.

Citizens and Permanent Residents of the United States

McGill University participates in the Federal Family Education Loan Program (FFELP). American students in need of financial assistance may apply for Stafford loans (subsidized and unsubsidized) and Grad Plus loans. Complete instructions can be found on McGill’s Student Financial Aid website at www.mcgill.ca/studentaid.

McGill Financial Aid

The Scholarships and Student Aid Office also administers the University’s need-based financial aid program, which includes short term loans to cover emergency situations, longer term loans, a number of graduate bursaries, and a Work Study program. All applicants for aid must first apply for the maximum government assistance for which they may be eligible. Applications can be found on the Financial Aid Menu on Minerva.

Scholarships and Student Aid Office,
Brown Student Services Building,
3600 McTavish Street, Montreal, QC H3A 1Y2
Telephone: 514-398-6013/6014
Email: student.aid@mcgill.ca
Website: www.mcgill.ca/studentaid

7.3 International Students

All students who are not citizens or Permanent Residents of Canada are required to obtain the necessary immigration documents (CAQ, Study Permit, Entry Visa when required) prior to entering the country. Do not leave home without proper documentation. You cannot change your status from Visitor to Student in Canada. Please note that students who have been accepted to programs that will be completed in less than 8 months have the option of studying without the CAQ and Study Permit (Visiting, Special).

Quebec Acceptance Certificate for Studies – The process to come to Canada begins with an application for Quebec Acceptance Certificate for Studies. There is a $100 processing fee for this document. Details on how and where to apply for the CAQ are provided with the McGill Admissions package.

Study Permit – Approved by Immigration Canada through a Canadian Embassy or Consulate. (There is a processing fee of $125 on all applications for Study Permits.)

A citizen of the United States, a Danish citizen living in Greenland, or a French national living in Saint Pierre and Miquelon is permitted to obtain the Study Permit at a Port of Entry, if in possession of the required supporting documents.

Applying to McGill from within Canada (outside Quebec) – Students transferring from another Canadian institution outside Quebec to McGill should send their documents and CAQ application to the Montreal address of Immigration Quebec. Students must normalize their status with Quebec and Canada Immigration prior to attending any classes at McGill.

For further information, or if there is an emergency, contact the International Student Services Office by telephone during regular office hours, 9:00 a.m. to 5:00 p.m., or by email.

International Student Services:
Telephone: 514-398-4349
Email: international.students@mcgill.ca

Compulsory Health Insurance – By Senate regulation, all students who do not have Canadian citizenship or Permanent Resident status, as well as their accompanying dependents, must participate in a compulsory health insurance plan administered by the University.

For information concerning rates, see www.mcgill.ca/internationalstudents/health. All inquiries related to this University policy must be directed to the International Student Services Office.

Health Insurance:
Telephone: 514-398-6012
Email: international.health@mcgill.ca
International Student Services, William and Mary Brown Student Services Building, 3600 McTavish Street, Suite 3215, Montreal, Quebec, H3A 1Y2.
Website: www.mcgill.ca/internationalstudents

7.4 Student Rights and Responsibilities

The Handbook on Student Rights and Responsibilities is published jointly by the Office of the Dean of Students and the University Secretariat. It contains regulations and policies governing your rights and responsibilities as a student at McGill. You will receive it when you get your student ID card at the ID Centre (Downtown and Macdonald Campuses).

The Handbook is also available at www.mcgill.ca/deanofstudents/rights.

7.4.1 Office of the Dean of Students

William and Mary Brown Student Services Building
3600 McTavish Street, Suite 4100
Montreal, QC H3A 1Y2

For information, contact (Dean/Associate Dean):
Telephone: 514-398-4990
Email: deanofstudents@mcgill.ca
Website: www.mcgill.ca/deanofstudents

The Dean and the Associate Dean of Students coordinate and promote initiatives concerned with important aspects of the student experience, such as advising, academic integrity, student discipline, student recognition programs, and outreach to families, the McGill community and the broader local community.

7.4.2 Office of the Executive Director, Services for Students

William and Mary Brown Student Services Building
3600 McTavish Street, Suite 4100
Montreal, QC H3A 1Y2

For information, contact:
Telephone: 514-398-3825
Website: www.mcgill.ca/studentservices
The Executive Director, Services for Students (EDSS), coordinates all student services at McGill to help promote student success and well-being. The EDSS is available to provide assistance and/or information on almost all aspects of non-academic student life. Concerns of an academic nature are directed to the proper individual, office or department.

7.5 Student Services – Downtown Campus

Unless otherwise indicated, all Student Services on the Downtown Campus are located in the William and Mary Brown Student Services Building, 3600 McTavish Street, Montreal, Quebec, H3A 1Y2.

A list of services available is given below. For further information, see the Student Services website: www.mcgill.ca/studentservices or the address indicated above.

Student Services
General Information: 514-398-8238
Website: www.mcgill.ca/studentservices

Career Planning Service (CaPS): Provides career education, guidance, and individual advising to help you in your search for permanent, part-time, or summer jobs and internships.
Brown Student Services Building, Suite 2200 514-398-3304
Email: careers.caps@mcgill.ca
Website: www.mcgill.ca/caps

Chaplaincy Service: Concerned with the spiritual and mental well-being of all students.
Brown Student Services Building, Suite 4400 514-398-4104
Email: chaplaincy@mcgill.ca
Website: www.mcgill.ca/chaplaincy

Counselling Service: Assists with psychological, emotional, and interpersonal issues as well as vocational and academic concerns.
Brown Student Services Building, Suite 4200 514-398-3601
Email: counselling.service@mcgill.ca
Website: www.mcgill.ca/counselling

First Peoples’ House: Fosters a sense of community for Aboriginal students studying at McGill.
3505 Peel Street 514-398-3217
Email: firstpeopleshouse@mcgill.ca
Website: www.mcgill.ca/fph

First-Year Office: Helps ease the transition of all students new to McGill. Coordinates "Discover McGill," a one-day, campus-wide University and faculty orientation.
Brown Student Services Building, Suite 2100 514-398-6913
Email: firstyear@mcgill.ca
Website: www.mcgill.ca/firstyear

Health Services and Dental Clinic: Provides access to experienced physicians, nurses and health educators who offer health services and information in a confidential atmosphere. Also operates a laboratory offering a wide array of testing, and a dental clinic.
Brown Student Services Building, Suite 3300 514-398-6017
Website: www.mcgill.ca/studenthealth

International Student Services: Offers support to international students on non-academic matters (immigration, health insurance, etc.), runs a Buddy Program and an orientation program.
Brown Student Services Building, Suite 3215 514-398-4349
Email: international.students@mcgill.ca
Website: www.mcgill.ca/internationalstudents

Mental Health Service: A psychiatric clinic that offers easily accessible treatment for mental health problems.
Brown Student Services Building, Suite 5500 514-398-6019
Website: www.mcgill.ca/mentalhealth

Scholarships and Student (Financial) Aid Office: Provides assistance in the form of loans, bursaries, and Work Study programs to students requiring financial aid.
Brown Student Services Building, Suite 3200 514-398-6013/6014 514-398-4807 (Scholarships)
Email: student.aid@mcgill.ca
Website: www.mcgill.ca/studentaid

Student Housing (Off-Campus): Maintains computerized lists of available off-campus student housing.
Student Housing Office, 3641 University Street 514-398-6010
Email: offcampus.housing@mcgill.ca
Website: www.mcgill.ca/offcampus

Residences: Offers accommodation for approximately 2,400 students. See section 7.7 “Residential Facilities” for more information.
Student Housing Office 514-398-6368
Email: housing.residences@mcgill.ca
Website: www.mcgill.ca/residences

Office for Students with Disabilities: Coordinates services to meet the needs of students with disabilities.
Brown Student Services Building, Suite 3100 514-398-6009
Email: disabilities.students@mcgill.ca
TDD: 514-398-8198
Website: www.mcgill.ca/osd

Tutorial Service: Sponsors an extensive tutorial program for students.
Brown Student Services Building, Suite 4200 514-398-6011
Email: tutoring.service@mcgill.ca
Website: www.mcgill.ca/tutoring

7.6 Student Services – Macdonald Campus

While students who study on the Macdonald Campus may make full use of all Student Services available at McGill, the Office of the Executive Director of Services for Students gives you direct access to the services listed below.

Unless otherwise indicated, Macdonald Campus services are located in the:
Centennial Centre, Room CC1-124
21, 111 Lakeshore Road
Telephone: 514-398-7992
Fax: 514-398-7610
Email: stuserv.macdonald@mcgill.ca

Career Planning Service (CaPS): Provides career education, guidance, and individual advising to help you in your search for permanent, part-time, or summer jobs and internships.
Telephone: 514-398-7582
Website: www.mcgill.ca/caps

Counselling Service: A professional counsellor is available three times a week offering counselling for personal, social and emotional issues, as well as for academic and vocational concerns. Appointments are required.
Telephone: 514-398-7992

Health Service: A referral service is available Monday through Friday. A nurse/health educator is on campus Mondays, Tuesdays and Wednesdays, and a physician is available by appointment on specified dates.
Telephone: 514-398-7565

Off-Campus Housing: Maintains computerized lists of available off-campus student housing. The Off-Campus Housing Service is available to assist students in finding accommodations which include: shared accommodations (with other students), rooms in

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homes, and apartments to rent in Ste-Anne-de-Bellevue and the surrounding areas.
Telephone: 514-398-7992
Website: www.mcgill.ca/offcampus

Student (Financial) Aid Office: Information about government aid, McGill loans and bursaries, and Work Study programs can be obtained at the Centennial Centre. During the academic year (September to April), an Administrator visits the campus every Wednesday to help students with financial problems.
Telephone: 514-398-7992

7.7 Residential Facilities

7.7.1 Graduate Housing – Downtown
Graduate Housing
Student Housing Office, Room 7
3641 University Street
Montreal, QC H3A 2B3
Telephone: 514-398-6050
Fax: 514-398-4457
Email: grad.housing@mcgill.ca
Website: www.mcgill.ca/residences/graduate

McGill University offers two main types of housing for graduate students: single-occupancy apartments and single bedrooms in houses with shared facilities. No family housing is available. Only a limited number of graduate spaces are available. Out of 215 spaces, approximately 70 become vacant annually. Availability is on a first-come, first-served basis, and you must be admitted or recommended for admission to be considered.

To apply, indicate "Yes" in the housing request area of your McGill application and check Minerva for updates in your housing status.

Occupancy of graduate housing is from September 1, 2009 to July 31, 2010 or from January 1, 2010 to July 31, 2010.

7.7.1.1 Single-Occupancy Apartments
Graduate housing includes a 7-story apartment block and three small apartment buildings. All are located within a short walking distance of the main campus.

Each apartment has its own bathroom and kitchen with refrigerator, stove, dining table and chairs. Other furnishings include: a single-sized bed and mattress, desk and study chair, dresser, bookshelf, night table, and vertical blinds (furnishings may vary depending on room size). Electricity, hot water and heating are included in the rent. Apartments are wired for private phone lines and internet service. Phone and internet service is not included in the rent and must be arranged through McGill's REZ Voice and Data Service.

7.7.1.2 Shared-Facilities Housing
There is a variety of graduate housing with shared facilities. For example, students can live in a former coach house of one of the largest mansions in Montreal's "Golden Square Mile" or a number of brownstone mansions featuring wood panelling, decorative moldings and elaborate ornamental fireplaces.

This type of housing offers graduate students the privacy of their own bedroom along with the benefits of communal living such as large kitchens and common rooms where housemates gather to dine and watch TV.

McGill offers all-female, all-male and co-ed graduate accommodation.

7.7.2 University Residences – Macdonald Campus
Campus Housing Office
P.O. Box 188
Macdonald Campus of McGill University
Sainte-Anne-de-Bellevue, QC H9X 3V9
Telephone: 514-398-7716
Fax: 514-398-7953
Email: residences.macdonald@mcgill.ca
Website: www.mcgill.ca/macdonald-residences

Residence life is an integral part of Macdonald Campus activities. Laird Hall, with a capacity of 250 students, is a co-ed residence that provides accommodation for undergraduate, graduate, and Farm Management Technology students. Residents enjoy comfortable rooms, modern kitchens, cozy lounge facilities, and other amenities that help make their residence life a complete and meaningful part of their university experience. All dorm rooms have telephone and high-speed network access services, which are available at extra cost.

The EcoResidence, Canada's first ecologically friendly student residence and winner of the Prix d'excellence from the Ordre des architectes du Québec, accommodates 100 students. The EcoResidence is a unique initiative that recycled two buildings and incorporated ecological construction technology. This residence will appeal to students who enjoy independent living in self-contained apartments of two or six single-bedroom units. Units are split-level with large, airy common living areas and fully equipped kitchens.

7.7.2.1 Residence Fees – Macdonald Campus
Residence fees are paid separately from tuition, in accordance with regulations of the Fee Payment Option selected at the time of signing a Residence Lease.

The residence fees for the 2009-10 session are $2,640 (double occupancy), $2,920 (single occupancy), and $4,620 (graduate single room). Rates for the EcoResidence vary from $390 to $530 per month. An updated fee sheet will be available with the residence application forms when an offer of accommodation is made.

There is no meal plan offered on the Macdonald Campus. Students may purchase a Commuter meal plan. Refer to www.mcgill.ca/foodservices/plans for additional information. At the moment, meals are also available on a cash basis from the Centennial Centre cafeteria. The cafeteria is open for breakfast and lunch only, five days per week (it is not open Saturdays, Sundays, or on holidays designated by the University). For budgeting purposes, the cost of meals per session is approximately $3,000.

7.7.2.2 Residence Occupancy – Macdonald Campus
The residence fees cover the period August 23, 2009 to May 1, 2010 (except for graduate students who sign a twelve month lease). You must vacate your room at the end of the lease term. Only under exceptional circumstances will you be granted permission to arrive prior to the beginning date of the lease or remain in residence during the summer months. In these cases, you must apply to the Campus Housing Office; an additional fee will be charged if permission is granted.

You can request permission to extend your stay in residence (at the normal weekly charge) if you are taking extended courses after the regular session, employed on the Campus, or registered for summer courses.

In exceptional circumstances, international students or students coming from a distance may be admitted early. Permission from the Campus Housing Office must be obtained before you leave home. Student Officers may be admitted before the opening date of courses, if permission is granted by the Campus Housing Office.
7.7.2.3 Facilities for Non-Resident Students – Macdonald Campus

The Centennial Centre features common rooms for studying. Lockers are available in the Macdonald-Stewart Building. You can rent them at the Students’ Society Office in Centennial Centre. You can purchase meals from the Snack Bar facility of the Centennial Centre and the Link Café located on the ground floor between the Macdonald-Stewart Building and Barton Library. The Snack Bar is open for breakfast and lunch only, Monday through Friday. The Link Café is open Monday through Thursday 8:00 a.m. to 6:00 p.m. and Friday 8:00 a.m. to 3:30 p.m. The Snack Bar and the Link Café are not open Saturdays, Sundays, or holidays designated by the University.

Note: Non-resident students cannot stay overnight in any residence without permission of the Campus Housing Office.

7.7.2.4 Student Parking – Macdonald Campus

You need a permit to park a vehicle on Macdonald Campus, provided you observe the parking regulations and other applicable rules. You can obtain a permit from the Campus Security Office, Laird Hall, Room 101, during regular office hours.

7.8 Athletics & Recreation

Downtown Campus

Department of Athletics & Recreation:

Offers a wide range of facilities, activities, and equipment. Facilities include a gymnasium, fitness centre, weight room (with athletics staff on hand seven evenings per week), pool, arena, Fieldhouse, stadium, indoor and outdoor running tracks, tennis courts, squash and racquetball courts, spinning, dance and martial arts studios, and various playing fields.

McGill students can participate in instructional, recreational, intramural and intercollegiate activities, as well as sports clubs.

There are nominal fees for instructional courses.

McGill Athletics Centre, 475 Pine Avenue West
Telephone: 514-398-7000
Email: jill.barker@mcgill.ca (recreational sports) or earl.zukerman@mcgill.ca (intercollegiate sports)
Website: www.athletics.mcgill.ca

Macdonald Campus

Athletics:

Offers a wide range of facilities, activities, and equipment free of charge. Facilities include a gymnasium, weight room (with fitness trainers on hand four evenings per week), arena, tennis courts, playing fields and large expanses of green space.

Students can participate in instructional, recreational, intramural and intercollegiate activities. There are nominal fees for instructional courses.

Athletics offices are located in the Stewart Athletic Complex, just west of the Centennial Centre.

Stewart Athletic Complex
Telephone: 514-398-7789
Website: www.macdonaldcampusathletics.mcgill.ca

7.9 Ombudsperson for Students

The position of Ombudsperson for Students is filled on a half-time basis by an academic staff member. The Ombudsperson receives complaints from students and assists in the resolution of those complaints through informal means including information, advice, intervention, and referrals with a view to avoiding the more formal grievance procedures that already exist in the University.

The Office of the Ombudsperson is a confidential, independent, and neutral dispute-resolution service for all members of the student community. Please call 514-398-7059 for an appointment.

Office of the Ombudsperson, 3610 McTavish, above Dr. Penfield, Suite 14, Main Floor.
Website: www.mcgill.ca/ombudsperson.

7.10 Extra-Curricular Activities

There are over 250 activities and clubs that students may join. These include international clubs; religious groups; political clubs; fraternities; communications groups such as Radio McGill, the McGill Tribune, and the McGill Daily; and some 50 miscellaneous groups (e.g., science clubs; literary, theatrical and musical societies; a chess club; and the McGill Outing Club).

The University Centre, 3480 McTavish Street, provides club rooms for these activities in a four-storey building with cafeterias, a ballroom, lounges and an experimental theatre. Activities for graduate students are centred in David Thomson House at 3650 McTavish Street. On the Macdonald Campus, facilities are located in the Centennial Centre.

7.11 Bookstore

The McGill University Bookstore stocks new and used textbooks, a full range of books for the academic and professional community, stationery supplies, and McGill insignia clothing and gift items. Visit the Bookstore website or in person to sign up for email reminders so you are the first to know about services such as used textbook buy back and other events.

3420 McTavish Street
Telephone: 514-398-7444
Website: www.mcgill.ca/bookstore

Macdonald Bookstore
Centennial Centre
Telephone: 514-398-8300
Website: www.mcss.mcgill.ca/bookstore.html

7.12 Computer Store

The McGill Computer Store, located on the second floor of the University Bookstore, sells a full range of computer hardware, software, peripherals and consumer electronics at educational prices.

3420 McTavish Street
Telephone: 514-398-5025
Website: www.mcgill.ca/mcs
Email: sales.mcs@mcgill.ca

7.13 Day Care

The McGill Childcare Centre is an independently run centre that can accommodate 106 children, ranging in age from four months to five years. Early application is required as placement is limited, especially for certain age groups.

The Centre is located at:
3491 Peel Street
Montreal, QC H3A 1W7
Telephone: 514-398-6943

A Campus Day Care Centre, located adjacent to the Macdonald Campus, is an independently run centre that can accommodate approximately 60 children, ranging in age from four months to five years. In addition, 50 children can be accommodated in Home Day Care within the neighbourhood. Preference is given to the Macdonald Campus community. Early application is recommended.

The Centre is located at:
1 Maple Avenue
Ste.-Anne-de-Bellevue, QC H9X 2E3
Telephone: 514-398-7951

For Home Day Care information, contact:
514-457-4440
8 Fees and Expenses

The University reserves the right to make changes without notice in the published scale of fees. Further information regarding fees can be found on the Student Accounts website www.mcgill.ca/student-accounts.

8.1 Fee Information Booklet

The Fee Information Booklet will be available on the Student Accounts website www.mcgill.ca/student-accounts/documents in July. This link will also be sent via your McGill email address shortly after you accept the offer of admission. It contains additional information as well as any fee adjustments that may have been made after the publication of this Calendar. Note that you are bound by the policies and procedures it contains. In the event of any discrepancy, the Fee Information Booklet supersedes the Calendar.

8.2 Access to Fee Information

You can view your Account Summary by Term on Minerva. The Fall 2009 term fees will be accessible as of August 1st.

8.3 Tuition Fees

Tuition rates are subject to change each academic year. Please access the "Schedule of Fees" on www.mcgill.ca/student-accounts/fees, which will be updated as soon as the fees are announced.

8.3.1 Quebec Students and Non-Quebec Students (Canadian or Permanent Resident)

In accordance with provincial government requirements, students must provide proof that they qualify for assessment of fees at the Quebec or non-Quebec Canadian rates; see www.mcgill.ca/student-accounts/documents for details.

Note: Students who do not submit appropriate documentation by the stipulated deadlines (December 1st - Fall; April 1st - Winter) are billed at the non-Quebec Canadian or the international rate, depending on the documentation submitted. Should your tuition status be changed during the evaluation period, any late payment and/or interest charges accumulated on the difference between the Quebec and Canadian tuition rates will also be waived.

8.3.2 International Students

Exemption from international tuition fees may be claimed by students in certain categories. Such students, if eligible, are then assessed at the Quebec student rate. A list of these categories and the required application forms can be obtained from Enrolment Services. Information is also available at www.mcgill.ca/student-records/fees/exemption.

For more information concerning Fee Exemptions, please email the Fee Administrator at feeordinator.es@mcgill.ca.

Since September 2007, all international doctoral students registered full-time (Ph.D./D.Mus./D.C.L. years 1 to 4) at McGill pay the same tuition fees as Quebec doctoral students. For more information, please refer to the MIDA's awards in the Graduate Fellowships and Awards section of the graduate Calendar. Students will be charged the full rate, and then credited by an amount equivalent to the international supplement (a tuition charge which is regulated by the MELS).

8.4 Documentation

For more information on documentation, see section 6.19 “Legal Documents”.

8.5 Compulsory Fees

Rates will be updated and available on the Student Accounts website, www.mcgill.ca/student-accounts, as soon as they become available.

8.5.1 Student Services Fees

Student Service fees are collected on behalf of student organizations and are compulsory. These fees must be approved by the student body through fee referenda according to the constitutional rules of the association or society.

Students vote on changes to Student Society fees during the Spring referendum period.

Graduate students classed as full-time or additional session/non-thesis extension as well as all postdoctoral candidates are covered by the PGSS Health and Dental plan. International students are charged only the Dental portion of the plan as they are required to participate in the University’s comprehensive and compulsory International Health Insurance plan. For more information, please contact International Student Services: 514-398-6012.

Rates for the current year may be found at www.mcgill.ca/student-accounts/canadian_insurance.

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Rates for the current year may be found at www.mcgill.ca/student-accounts/canadian_insurance.

8.6 Administrative Charges

The University charges a number of administrative fees to students that include:

Registration Charge - All students in courses and programs are assessed a registration fee.

Information Technology Charge - The purpose of the information technology fee is to enhance certain technology services provided to students as well as to provide training and support to students in the use of new technology.

Transcripts and Diploma Charge - The University charges a transcripts and diploma fee to all students, which entitles you to order transcripts free of charge and covers the costs of your graduation.

Copyright Fee - All students in courses and programs are charged the copyright fee, which covers the cost of the annual fee that all Quebec universities are required to pay to Copibec (a consortium that protects the interests of authors and editors) for the right to photocopy materials protected by copyright.

You may access the "Schedule of Fees" on www.mcgill.ca/student-accounts/fees/comfrees/it, which will be updated as soon as the fees for the 2009-2010 academic year are announced.
8.7 Other Fees

International Student Health and Accident Plan (compulsory)
- Single $691
- Dependant (one student with one dependant) $1,698
- Family (one student with two or more dependants) $3,225

Application for Admission*
- All Undergraduate programs $85
- All Graduate programs $100
- Admission appeals charge (to the University Admission Appeals Committee) $100

Late Registration

**After regular registration deadline:**
- All eligible returning students, except Special Students and graduate part-time students $50
- Special Students and graduate part-time students $20

**As of the second day of classes:**
- All students except Special Students and graduate part-time students $100
- Special Students and graduate part-time students $40

Late Course Change Fee $25 (each change after deadline for course change)

Minimum Charge upon withdrawal $100 (or, for newly admitted students, the deposit, whichever is higher)

Re-reading Examination Paper $35 (refundable in some faculties)

Supplemental Examination $35

Duplicate Student ID Card $20

Late Payment – charged on balances >$100 as of the end of October (end of February for the Winter term) $25

Interest on outstanding balances (interest rate revised on June 1):
- 1.24% per month or 14.9% annually
- Returned cheque $20
- Refund charge for cheques (depending on value of refund) $5-$10

Faculty of Music Fees:
- Audition Fee $60
- Supplemental Practical Examination in Music $150

* All students making application to Graduate and Postdoctoral Studies are required to pay this fee, including those already registered at McGill.

If a department or an applicant defers an admission within the following year, the application fee need not be paid again.

8.8 Billings and Due Dates

Confirmation of Acceptance Deposit

In certain graduate departments, you are required to make a deposit on tuition shortly after receiving notice of your acceptance to the University. You will be required to confirm your acceptance of the offer of admission on www.mcgill.ca/minerva/applicants and pay the required deposit by credit card (Visa or Mastercard) at that time.

Invoicing of Fees

Fees are assessed on a term by term basis.

Electronic billing is the official means of delivering fee statements to all McGill students. Your e-bill includes all charges to your account, including tuition, fees, health insurance and other charges. The University generally produces e-bills at the beginning of the month and sends an email notification to your official McGill email address stating that your e-bill is available for viewing on Minerva. Charges or payments that occur after the statement date appear on the next month's statement, but you can view them immediately on the Account Summary by Term under the Student Accounts Menu on Minerva (this is the online dynamic account balance view).

Failure to check email on a regular basis in no way warrants the cancellation of interest charges and/or late payment fees. Refer to the Student Accounts website at www.mcgill.ca/student-accounts for information on payment due dates.

<table>
<thead>
<tr>
<th>Term</th>
<th>Payment Due Date</th>
</tr>
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<tbody>
<tr>
<td>Fall term</td>
<td></td>
</tr>
<tr>
<td>Returning students</td>
<td>August 28, 2009</td>
</tr>
<tr>
<td>Students new to the University in Fall</td>
<td>September 29, 2009</td>
</tr>
<tr>
<td>Winter Term</td>
<td></td>
</tr>
<tr>
<td>Returning students</td>
<td>January 6, 2010</td>
</tr>
<tr>
<td>Students new to the University in Winter</td>
<td>January 29, 2010</td>
</tr>
</tbody>
</table>

**Late Payment Fees:** If you have an outstanding balance greater than $100 on your account on October 30 (February 26 for the Winter term), you are charged a late payment fee of $25 over and above interest.

8.8.1 Guest Access on Minerva

You may choose to give access privileges to a guest on Minerva. These privileges include viewing e-bills/account summaries, tax receipts and e-payment.

- The www.mcgill.ca/student-accounts/guest web page describes how to set up this access. You need to provide certain information about the individual you want to access your fee-related information. The guest will be contacted by email and provided with a link to use within a designated time period.

- You can cancel guest access privileges at any time.

- Note that Student Accounts staff may respond to questions from your authorized guest regarding the information to which they have been given access.

- If you do not want to give a guest access privileges to Minerva, you can enter an alternative student billing email address on Minerva to which Student Accounts will send a copy of the monthly e-bill notification. However, if someone has been granted access as a guest and their guest email is the same as a student billing email address, the University will de-activate the student billing email address in order to only notify your guest about the billings once.

- You should NOT share your PIN (personal identification number) with anyone, including a guest on Minerva. Guest Access allows your guest to view your account information without knowing your PIN.

8.9 Fees and Withdrawal from the University

If you decide not to attend the term(s) in which you are registered, you must officially withdraw from the University in accordance with section 6.7.2 "Regulations Concerning University Withdrawal". Otherwise, you are liable for all applicable tuition and other fees.

If you use Minerva to drop your last course between September 1 and the end of the withdrawal period with full refund, you must submit a signed Withdrawal Form to be withdrawn from the University. You will be automatically charged a minimum charge of $100 (or your deposit fee if newly admitted, whichever is higher) to cover administrative costs of registration.

If you stop attending classes without dropping your courses and do not submit the Withdrawal Form, you are liable for all applicable tuition and other fees. See section 6.7.2 "Regulations Concerning University Withdrawal".

8.9.1 Fee Refund Deadlines

The deadline dates for course refunds are independent of the deadline dates given for withdrawal from courses. See section 6.2.3 “Summer Registration” for information about fee refund after withdrawal from a Summer Term of Residence for newly-admitted graduate students only.
Fall Term – up to and including September 20: Returning students – 100% refund (Less minimum charge of $100 in the case of complete withdrawal.) New students – 100% refund (Less registration deposit or $100, whichever is higher.)

Fall Term – after September 20: No refund.

Winter Term – up to and including January 24 Returning students – 100% refund (Less minimum charge of $100 in the case of complete withdrawal.) New students – 100% refund (Less registration deposit or $100, whichever is higher.)

Winter Term – after January 24: No refund.

* Including tuition fees, society and other fees, student services, registration, transcripts and diploma charges, and information technology charge.

8.10 Other Policies Related to Fees
8.10.1 Overdue Accounts
All tuition and fees assessed by the University must be paid in full or arrangements must be made to settle the debt.

Students’ accounts are considered delinquent if they are not paid in full within 60 days after the bill is issued. McGill places a financial hold on these accounts, preventing students from obtaining official academic transcripts and from accessing Minerva for any registration functions.

Interest: Interest is charged on overdue balances at the monthly rate of 1.24% multiplied by the balance outstanding at the end of the month (14.9% annually). The rate is evaluated each Spring, at which time it is set for the following academic year.

Note: You should regularly verify your account balance on Minerva.

The University has no obligation to issue any transcript of record, award any diploma, or re-register a student if you do not pay your tuition fees, library fees, residence fees or loans by their due date.

Information for Registered Students
If you register for a term but still owe amounts from previous terms, you must either pay your account or make payment arrangements with the Student Accounts Office before the end of the course add/drop period. If you have financial difficulty, first contact the Student Aid Office (Brown Student Services Building, Room 3200; 514-398-6013) to discuss the possibility of obtaining financial aid.

If you fail to pay the previous term’s fees or to make arrangements to settle your debt prior to the add/drop deadline, the University will cancel your registration in the current and subsequent terms.

Information for Students Who Are No Longer Registered
When students fail to settle their debt or reach a suitable payment arrangement, or fail to provide the Student Accounts Office with up-to-date contact information, the University refers these delinquent accounts to a collection agency. If neither the University nor the collection agency is able to collect on the account, the University reserves the right to have the student reported to a credit bureau. You should be aware that the University is entitled to use all legal means to obtain payment and that students are responsible for all costs associated with such actions.

8.10.2 Cancelling Registration for Non-Payment
In accordance with the fee policy stated in section 8.10.1 “Overdue Accounts”:

The Student Accounts Office will make all reasonable efforts to notify you if your account is delinquent, or if you owe more than $100 from the previous term, before the University cancels your registration for non-payment. The cancellation is effective the last day of the add/drop period unless you settle the account or make payment arrangements with the University by then. If you pay or make payment arrangements with the Student Accounts Office after the add/drop deadline and you want the University to reinstate your registration for the current or subsequent term(s), you must complete the Request for Reinstatement form (www.mcgill.ca/files/student-accounts/RequestforReinstatementForm.pdf) and submit it to the Student Accounts Office, which will forward it to Enrollment Services for approval and processing.

8.10.3 Acceptance of Fees vs. Academic Standing
Acceptance of fees by the University in no way guarantees that students will receive academic permission to pursue their studies. If it is subsequently determined that your academic standing does not permit you to continue, all fees paid in advance will be refunded by applying to the Student Accounts Office.

8.10.4 Fees for Students in Two Programs
Students in two programs normally are billed additional fees for their second program. Depending on the level of the two programs (e.g., one at the undergraduate versus one at the graduate level), you may incur both society and faculty fees and/or additional tuition fees. Consult the Student Accounts website for further details.

You should consult the Fee Coordinator in Enrolment Services for information on tuition fees if you are a student in two programs. Adjustments to bills are made throughout the term in cases where fees cannot be automatically calculated.

8.10.5 Senior Citizens
Financial aid is available for students in need who are aged 65 or over and who are enrolled in full-time degree programs. Contact the Scholarships and Student Aid Office for more information at 514-398-6013.

8.10.6 Quebec Inter-University Transfer Agreements
If you are taking courses as part of the Quebec Inter-University Transfer (IUT) agreement, you are required to pay the fees at your home university. The agreement covers only the transfer of academic credits. International students in undergraduate programs are not usually permitted to take IUT courses. IUT students taking courses at McGill are required to pay additional course charges that are compulsory upon registration, such as special activity charges or course material costs. The University reserves the right to refuse course registrations in non-government-funded activities.

8.11 Deferred Fee Payment
8.11.1 Students with Sponsors
If your fees will be paid by an outside agency such as the Department of Veterans Affairs, CIDA, a foreign government, or your University department (i.e., teaching assistants or demonstrators), you must have written proof of this sponsorship. Your sponsor must confirm the conditions of their sponsorship in writing on company letterhead to the University. This allows the University to initiate a contract with your sponsor and effect the payment to your fee account. You need to notify the University at least one month before the beginning of the term in which the contract takes effect.

For more information and the required forms, see www.mcgill.ca/student-accounts/third.

When a third party agrees to pay fees on your behalf, payment is recorded on your fee account, which reduces the balance you must pay. The University reserves the right to insist upon payment. If the third party does not pay the promised fees within 90 days of invoicing, you are responsible for paying the fees plus the late payment fee and accrued interest.
8.11.2 Students Receiving McGill Scholarships/Awards

Fall Term: The University normally credits McGill scholarships or awards to the recipient's fee account by mid-August. These awards reduce the student's outstanding balance.

Winter Term: Upcoming Winter term scholarships or awards can be viewed by recipients on Minerva once they are processed by the Student Aid Office. These awards are future-dated and are released to the student's fee account by January 4.

8.11.3 Students Receiving Government Aid

The University encourages you to pay your tuition promptly when you receive your government assistance. Interest on outstanding tuition is charged monthly beginning in August for returning students and in September for new students. If you apply for government assistance by June 30 (June 1 for U.S. students), you are entitled to an exemption of interest and/or late payment charges when you receive your government aid award at either the Student Aid Office or the Macdonald Campus Student Services.

Any financial aid you receive must first go toward paying your tuition and student housing fees.

8.11.4 Graduate Awards/Teaching Assistantships

Graduate students who are recipients of awards where funds are paid directly to them (e.g., FRSQ, FORNT, etc.) are normally required to pay their fees by the payment due dates. If you are dependent on the income received from either Teaching Assistantships, stipends and/or fellowships in order to pay your tuition, you should consult with the office responsible for your pay (either your graduate department or on the GPS website) to see if you qualify for a deferral of your fees. Arrangements can then be made with the department to request a deferral through the Student Accounts Office and the department will normally recommend that you arrange for regular deductions at source to pay tuition. To initiate these deductions, simply fill out the form "Student Fee Payroll Deduction Authorization" found at www.mcgill.ca/student-accounts/forms.

Since September 2007, all international doctoral students registered full-time (Ph.D./D.Mus./D.C.L., years 1 to 4) at McGill pay the same tuition fees as a Quebec doctoral student. For more information, please refer to the MIDAs awards in the Graduate Fellowships and Awards section of the graduate Calendar.

8.12 Other Information

8.12.1 Payment Procedures

Please see the Student Accounts website at www.mcgill.ca/student-accounts/procedure for the various methods of payment available to students and their guests.

8.12.2 Tax Receipts

T4A (RL-1), T2202A and Relevé 8 slips are issued on Minerva under the Student Accounts Menu by the end of February each year. More information on these slips is available on www.mcgill.ca/student-accounts/tax.

8.13 Yearly Fees and Charges

In thesis programs, students are charged a flat rate based on 15 credits per term.

In non-thesis programs, students are charged a flat rate (based on 15 credits per term) if they are registered full-time, or a per credit rate if they are registered for less than 12 credits.


Part-time, Qualifying, Special, Diploma and Certificate students will be charged tuition fees at the per credit rate and will be subject to student society fees, student services fees, registration, transcripts and diploma charges, and information technology charges.

Students who have completed the residency requirements for their program and yet have not completed the program requirements are required to be registered in a supplementary session until graduation. Where a student is in a thesis program, this is called "Additional Session"; where a student is in a non-thesis program, this is known as "Non-Thesis Extension".

The fees in both instances are those for 15 credits at the Quebec rate of tuition. Society, student services and athletics fees may be pro-rated. Please refer to section 4.1.1 "Residence Requirements – Master's Degrees" and section 4.2.1 "Residence Requirements – Doctoral" for further information.

Students who have a registration status of "Non-Resident" are charged $200 for the academic year.

In the Summer term, students with a status of "Additional Session" or "Continuing" in a thesis program are not charged tuition fees. Students in a non-thesis program taking courses in the Summer term will be charged tuition on a per credit basis.

Note: Please consult the Student Accounts website at www.mcgill.ca/student-accounts/fees for the current fees payable by graduate-level students.

9 Postdoctoral Research

9.1 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 Graduate and Postdoctoral Studies in order to have access to University facilities including libraries, computer facilities, etc.

9.2 Guidelines and Policy for Academic Units on Postdoctoral Education

The general guidelines listed below are meant to encourage units to examine their policies, procedures, and privileges for 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 familial or health leave (as defined in the GPS Calendar, General Information, section 10.6 “Health and Parental/Familial Leave of Absence Policy”) 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 one or more McGill professors, including Adjunct Professors. 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 Graduate and Postdoctoral Studies. Initial registration will require an original or notarized copy of the Ph.D. diploma. Registration will be limited to persons who fulfill 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. In addition, students will have access to the University's libraries and sports facilities upon presentation of their identity card. A fee will be charged on an annual or term basis.

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 also 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 Department of Athletics will grant Postdocs access to sports facilities and the Montreal Sports Centre will grant Postdocs access to sports facilities upon presentation of their identity card. A fee will be charged on an annual or term basis.

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 and an annual association fee is automatically charged. Postdocs are permitted membership in the Faculty Club; an annual fee will be charged for this membership.

vii. Postdocs are encouraged to participate in the Centre for University Teaching and Learning staff development seminars. They will be accommodated free of charge for courses which are open to faculty members.

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

ix. Canadian citizens, Permanent Residents, and international Postdocs may enrol as part-time students in the second language written and spoken English courses provided by the Centre for Continuing Education. They will be charged a fee for these courses. If the period of studies is longer than six months, international Postdocs must have a CAQ and a Study Permit.

x. Postdocs can opt in to various student services. Fees are applicable. Information is available at www.mcgill.ca/studentservices.

3. Appointment, Pay, Agreement of Conditions

i. Appointments may not exceed your registration 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 as set by the University in accordance with guidelines set by federal and provincial research granting agencies. There are no provisions for paid family 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 on the web at www.mcgill.ca/gps/postdocs). This should stipulate, for example, the purpose of the postdoctoral appointment (research training and the advancement of knowledge), the duration of the fellowship/stipend, the modalities 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 (Graduate and Postdoctoral Studies General Information section 10.3 “Vacation Policy for Graduate Students and Postdocs” and section 10.6 “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.

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 also 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 and an annual association fee is automatically charged. Postdocs are permitted membership in the Faculty Club; an annual fee will be charged for this membership.

vii. Postdocs are encouraged to participate in the Centre for University Teaching and Learning staff development seminars. They will be accommodated free of charge for courses which are open to faculty members.

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

ix. Canadian citizens, Permanent Residents, and international Postdocs may enrol as part-time students in the second language written and spoken English courses provided by the Centre for Continuing Education. They will be charged a fee for these courses. If the period of studies is longer than six months, international Postdocs must have a CAQ and a Study Permit.

x. Postdocs can opt in to various student services. Fees are applicable. Information is available at www.mcgill.ca/studentservices.

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.

ii. Each academic unit receiving 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 General Information, Regulations and Research Guidelines Calendar of Graduate and Postdoctoral Studies;
- to present themselves for registration to Graduate and Postdoctoral Studies with a complete submission;
9.3 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 (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

9.4 Leave of Absence for Health and Parental/Familial Reasons

A leave of absence may be granted by Graduate and Postdoctoral Studies for maternity or parental reasons or for health reasons (see section 10.6 “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 GPS.

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/postdocs/becoming/leave under “Information on the Funding Council Leave Policies for Graduate Students and Postdoctoral Fellows”.

9.5 Student Services - Downtown Campus

See section 7.5 “Student Services – Downtown Campus”.

9.6 Student Services - MacDonald Campus

See section 7.6 “Student Services – Macdonald Campus”.

10 Graduate Studies Guidelines and Policies

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

The general guidelines suggested below are meant to encourage units to examine their graduate programs and to specify their own policies and procedures. These guidelines are directed primarily towards thesis programs but will, in part, be appropriate for non-thesis programs as well.

Each academic unit should have explicitly stated policies and procedures regarding the advising and supervising of graduate students, as well as established means for informing students of procedures and deadlines (e.g., orientation sessions, handbooks) and mechanisms for addressing complaints. Academic units should ensure that their policies and procedures are consistent with the Charter of Students’ Rights. For their part, graduate students are responsible for informing themselves of these policies and procedures.

1. Assignment of Advisors, Supervisors and Committees

i. Each unit should designate a member (or members) of the academic staff (usually the graduate program director) to monitor the progress of students throughout the graduate program, to ensure that all conditions of admission and requirements are fulfilled, to provide students with information on their program, their progress through it, sources of and policies on financial support, and to advise them how to resolve problems which may arise during their program.

ii. As soon as possible, students should have a supervisor who has competence in the student’s proposed area of research, and a program or thesis committee. Although procedures and timetables for choosing supervisors and committees may vary across programs, they should be consistent within a particular program and should be made clear to incoming students. Thesis supervisors must be chosen from academic staff in tenure-track positions. Faculty Lecturers and Research Assistants may not act as supervisors but in exceptional cases, may be co-supervisors. Emeritus Professors and Adjunct Professors may co-supervise. Professors (Special Category) may supervise or co-supervise students. In the case of supervision, the academic unit in question must ensure continuity of appropriate supervision of their graduate students.

2. Program

i. Early in their program, students should be informed of the phases through which they must pass towards the achievement of the graduate degree, the approximate amount of time each phase should take, the criteria for its successful completion, and any deadlines relating to these phases.

ii. It is important that students are made aware of whatever courses are required to complete their programs, that these courses are available, and that they relate to students’ proposed areas of research or to the development of related areas of scholarship.

iii. Where relevant, students should also be informed early in their program of language requirements or comprehensive examinations. The guidelines, criteria and procedures for comprehensive examinations must be explicit and consistently applied in each program. Academic units should consider the rationale for language and comprehensive examinations and how they relate to the objectives of the graduate program.

iv. Every effort should be taken to ensure that students choose, as soon as possible, realistic and appropriate areas of research commensurate with degree requirements.

v. There must be clear procedures established in every unit by which students receive guidance and constructive criticism on their progress on a regular basis through the program (e.g., regular meetings and/or email communication with supervisors and committees, attendance at research seminars, semester or annual reviews of student progress). In addition to regular meetings between the student and supervisor or advisory/thesis committee, each unit must establish a procedure to provide feedback to thesis students regarding their research progress. At least annually, there must be a meeting between the student, supervisor and advisory/thesis committee or, in the case where there is no such advisory/thesis committee, there must be a meeting between the supervisor and a departmental representative, at which objectives for the upcoming year are established and the prior year’s research progress recorded and evaluated. A written record of such
meetings must include the signature of the student, supervisor, and the not make an ethics committee member co-departmental representative, and this record must be retained in the student’s departmental file. (The Graduate Student Research Objectives Report Form, the Graduate Student Research Progress Record, and the Graduate Student Research Progress Report Form are to be utilized to keep a record of these meetings.) In the case where the student does not make expected progress, the advisory or thesis committee or, in the case where there is no such advisory or thesis committee, the student, supervisor and a departmental representative must meet at least once per semester for the subsequent twelve months to review progress and if appropriate to set new objectives. On the occasion of a second unsatisfactory progress report, the student may be required to withdraw from the program of study.

vi. Students should be made aware of the cost of living in Montreal and of sources of financial support (e.g., teaching or research assistantships, fellowships) and of the facilities available to them (e.g., study space, computers).

vii. Students should receive guidance and encouragement in areas relating to their growth in scholarship, professional development and career planning. Examples may include: where appropriate, reporting research, writing abstracts, preparing papers for conference presentation or for publication, writing grant and fellowship applications, conducting a job search, and preparing for job interviews.

viii. Units should be sensitive to special academic needs and concerns that may arise in the case of certain students, such as international students or students who undertake graduate studies after a long absence from university.

3. Responsibilities

Each unit should clearly identify the student’s supervisory needs at each phase and the means by which these needs will be met. Some functions will be fulfilled by the Chair, some by the graduate program director, some by the supervisor and some by the committee. Each unit should clearly identify the specific responsibilities of each of these, as well as the responsibilities of students themselves.

i. Each unit should consider the availability of student support, research facilities, space and availability of potential supervisors in determining the number of students admitted into the program.

ii. Some examples of the responsibilities of the graduate program director are to be knowledgeable about program requirements, the composition of committees, the procedures for comprehensive and oral defense examinations, and other policies relating to graduate studies; to maintain a dossier on each student’s progress; and to be sensitive to graduation deadlines and students’ career plans.

iii. Some examples of the responsibilities of a supervisor are to uphold and to transmit to students the highest professional standards of research and/or scholarship; to provide guidance in all phases of the student’s research; to meet with their students regularly; to provide prompt feedback when work is submitted including drafts of the thesis; and to clarify expectations regarding collaborative work, authorship, publication and conference presentations.

iv. Some examples of the responsibilities of the students are to inform themselves of program requirements and deadlines; to work within these deadlines; to communicate regularly with the supervisor and committee; and to submit progress reports to the supervisor and committee.

v. The Chair of the unit should ensure that procedures are in place to address serious disagreements that may arise, for example, between a student and a supervisor or between a supervisor and committee members. Such procedures should involve a neutral mediator who will ensure that all sides of a dispute are heard before any decision is made.

4. Quality of Supervision and Teaching

i. Academic units and Graduate and Postdoctoral Studies should consider ways to assess and improve the quality of supervision and to help new supervisors, e.g., through workshops or mentoring models. Procedures for monitoring the quality of graduate student supervision and for providing constructive feedback for supervisors should be developed.

ii. Graduate supervision should be recognized as an integral part of the academic responsibility of an academic unit and should be considered in the allocation of workload, as should the teaching of graduate courses.

iii. Academic units should establish criteria of excellence in supervision and graduate teaching appropriate to their disciplines and should suitably reward those who meet these criteria, e.g., in decisions concerning tenure and promotion, or merit pay awards.

iv. The maximum number of students under the direction of a single supervisor should be consistent with the ability of the supervisor to provide quality supervision, taking into account the workload of the supervisor and norms of the discipline.

v. Procedures should be established for ensuring continuity in supervision when a student is separated from a supervisor – for example, when the supervisor takes a sabbatical leave, retires from McGill or changes universities or when the student leaves to complete field work or takes a job before submitting a thesis.

Revised by Council of FGSR, April 23, 1999 and October 6, 2003

10.2 Policy on Graduate Student Research Progress Tracking

This is a new mandatory policy and procedure to track the research progress of graduate students. The policy is referred to in the amended “Guidelines and Regulations for Academic Units on Graduate Student Advising and Supervision” in section 2.v. in bold print. Documents to record progress can be found on the GPS website: www.mcgill.ca/gps/staff/forms.

The following is a summary of the main elements of the new mandatory policy. The following steps must be followed for each graduate student in a thesis program:

1. Annually, the student must meet with, at minimum, their supervisor(s) and a departmental representative. This meeting can occur in the context of an annual thesis or advisory committee in those departments that have thesis committees.

2. At the first such meeting (to be held shortly after thesis students begin their programs), written objectives/expectations for the year must be recorded on the first of three forms, Form #1 (Graduate Student Research Objectives Report Form). All three people at the meeting must sign this form. A student who does not agree to sign the form must write a statement detailing his/her objections to the expectations recorded on the form.

3. Approximately one year later, and every year thereafter, the student, supervisor(s) and the departmental representative should meet again to review the progress that has been achieved toward the recorded objectives. Prior to the meeting, the student should record his/her accomplishments and progress for the year by completing Form #2 (Graduate Student Research Progress Record). This completed form is then evaluated by the supervisor and the departmental representative on Form #3 (Graduate Student Research Progress Report Form). All parties sign Form #3. A student who does not agree to sign the form must write a statement detailing his/her objections. At this same meeting, objectives for the following year should be recorded on Form #1, as per the procedure described in point 2, above.

4. In the event that recorded research progress is unsatisfactory, a new set of objectives should be developed for the student at
the meeting, and recorded on Form #1. These new, or interim, objectives apply only to the next semester. Evaluation of progress should take place after that semester has concluded, following the steps described in point 3, above.

5. In the event that a student has any two unsatisfactory evaluations they may be required to withdraw from their program of study. These two unsatisfactory evaluations need not be successive.

6. All forms are to be kept in departmental files.

7. Departments that already have progress tracking forms may continue to utilize them, but these must conform to the fundamental principles underlying this new policy. Specifically, any departmental procedure or forms to record graduate research progress must:
   • be used annually;
   • be used in a meeting with the supervisor and one other departmental representative, and signed by all parties;
   • include a written statement of expectations approximately one year before any evaluation. (Note: This can be one semester in the case of expectations following an unsatisfactory evaluation);
   • permit the student to submit a minority report and not sign;
   • state clearly that any two unsatisfactory evaluations may be grounds for requiring a student to withdraw.

Please note this new University policy is MANDATORY. Students may gripe against a department that fails to adhere to the policy and procedures outlined above.

Senate, September 2003

10.3 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

10.4 Ph.D. Comprehensives Policy

Preamble
The majority of doctoral programs at McGill require candidates to pass a comprehensive examination or set of examinations or equivalent, such as qualifying examinations, preliminary examinations, candidacy paper, comprehensive evaluation, thesis proposal, etc. The Calendar of Graduate and Postdoctoral Studies (GPS) includes the following statement:

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 and approved by Graduate and Postdoctoral Studies. It is the responsibility of students to inform themselves of these details at the commencement of their programs.

It is recognized that expectations for the Ph.D. comprehensive will vary according to the needs of the discipline. It is important to make it clear to doctoral candidates what the expectations and procedures are for their Ph.D. comprehensive, and to maintain consistency within a given program.

General Policy
1. At the beginning of the relevant academic year, units must provide doctoral students with a written description of the Ph.D. comprehensive, covering the following issues: objectives and content, format, timing, assessment, grading and reporting, failures. (See below for details.)

2. All units that have a Ph.D. comprehensive must adopt an administrative course number for it, usually XXXX 701. One of the following forms of grading must be adopted and used consistently within the program: Pass/Fail or letter grades. (*Mixed* modes of grading are not permitted, i.e., some students within a program reported on a Pass/Fail basis and others by means of letter grades.)

Specific Issues

Objectives and Content

Units must specify the objectives of the Ph.D. comprehensive. Objectives may include assessing any of the following (or a combination), with a view to determining whether the student demonstrates the necessary research skills and academic achievements to be permitted to continue in the Ph.D. program. (This list is not intended to be exhaustive.)

• knowledge of the discipline (from the point of view of breadth)
• understanding of the proposed field of research
• ability to conduct independent and original research
• a thesis proposal
• professional skills
• ability to present and defend material orally

The content of the comprehensive must be consistent with the objectives and should be appropriately circumscribed. Students must be given an indication of the range of material that may be covered in the examination and suggestions as to how to cover this material (e.g., via reading lists, courses, etc.).

Format

The format of the comprehensive must be clearly stated and must be consistent across students within a particular program. The following list gives some of the more common formats, which are often combined. (This list is not intended to be exhaustive.)

• written examination of a specific duration
• take-home examination
• extended research paper(s)
• written research proposal
• oral exam (which may include or consist of a defense of a research paper or research proposal)

If the comprehensive consists of several parts, the relationship (if any) between them must be made clear.

Timing

Timing of the comprehensive must be specified, including the earliest and latest dates by which the comprehensive is to be completed. Students must be informed of the specific dates of the exam in sufficient time for them to prepare for it. Given the importance of the Ph.D. comprehensive and the consequences of failure, the exam should be held reasonably early in the program, so that students do not spend several years preparing for it.

Prerequisites must be specified. For example, clarify whether all course work must have been completed prior to the comprehensive and whether the comprehensive is the final step before thesis research and writing.

Assessment, Grading and Reporting

Evaluation parameters must be made clear, including information about who sets the exam questions and who evaluates the student. If performance is assessed by a committee, clarify how the committee is appointed and who sits on it. In the case of written examinations, clarify whether the grading is done by one or more people.

Where there is more than one component to the examination (e.g., an oral exam plus a written exam), it must be made clear how these components are factored into the final grade. For example, make it clear whether each component counts equally, whether the assessment is global, and whether failure on one part of the comprehensive examination (or on one question) results in an overall failure.

Feedback

The assessment and reasons for the decision must be documented and provided to the student in sufficient detail to allow the student to understand the decision, including identifying strengths...
and weaknesses. (A number of units have developed short forms specifically for this purpose.) In the case of oral examinations, the student should also be given feedback on presentation, logical exposition, ability to answer questions, etc.

In the case of oral exams, units may wish to consider the following: ensure that there is a reasonably detailed written assessment of the student’s performance; tape the oral examination; allow the student to select a faculty member to act as a neutral observer; have one faculty member serve as a neutral chair (equivalent to a Pro-Dean); have an “outside” committee member; have the oral examination open to other students and faculty members.

**Plagiarism**

McGill University values academic integrity, which is fundamental to achieving our mission of the advancement of learning. Therefore, all students must understand the issues associated with academic integrity [see www.mcgill.ca/integrity for more information].

Plagiarism in a Ph.D. comprehensive examination contravenes McGill University’s academic goals and standards. Consequently, any student found guilty of plagiarism under the Code of Student conduct and Disciplinary Procedures (see the Handbook on Students Rights and Responsibilities available at www.mcgill.ca/secretariat/policies/students) in a Ph.D. comprehensive examination may face very serious penalties, even expulsion from the University without the degree.

**Failures**

1. **Repeats**

   In the event of a failure, units must allow, without prejudice, one repeat of the comprehensive (in whole or in part). The first time a student fails, the student must be informed in writing by the department that he/she has failed the comprehensive and must be informed of conditions relating to a repeat of the examination. If such circumstances, the grade of HH (continuing) will be used. In the event of a second failure, a grade of F will be reported to Graduate and Postdoctoral Studies and the student will be asked to withdraw from the Ph.D. program.

   Conditions for retaking the examination must be clearly stated, including the time frame, potential dates, nature of the re-examination, committee membership, etc.

   Units have the right to specify further requirements in the event of failure (e.g., requiring students to take an additional course or courses in areas where they have shown weakness on the comprehensive).

2. **Plagiarism**

   If plagiarism is suspected, the case will be referred directly to the committee on Student Discipline in accordance with the code of Student Conduct, Part III (article 15) and Part V (A). If plagiarism is established by due University process, the student is considered to have failed the examination, with no possibility of repeat.

3. **Review and Reassessment**

   **Rereads.** In the case of written comprehensives, the Graduate Studies Reread Policy applies.

   A student who fails an oral examination may request a review. In such cases, Graduate and Postdoctoral Studies will conduct a review of the examination process and procedures.

**Other Relevant Policies/Offices**

Charter of Student Rights
Graduate Studies Reread Policy
Office for Students with Disabilities
Approved by Executive of Faculty of Graduate Studies and Research (FGSR) February 17, 1997
and Council of FGSR March 7, 1997

10.5 Graduate Studies Reread Policy

This policy applies only in the case of marks given for written work in 600- and 700-level courses. For 500-level courses and below, the reread policy of the appropriate undergraduate faculty applies.

**Consultation**

In accordance with the Charter of Student Rights, and subject to the conditions stated therein, graduate students have the right, subject to reasonable administrative arrangements, “to consult any written submission for which they have received a mark and to discuss this submission with the examiner”. Upon request by the student, the instructor of the course is obliged to conduct this consultation with the student.

(Note: Where materials have been graded by a TA and the student wants a reconsideration of the grade, the faculty member responsible for the course is expected to review the materials and the appropriateness of the grade. This is so even if the materials in question have already been discussed by the TA with the student.)

**Verification**

In a case where a student feels that totalling errors have been made in arriving at the final grade, the student can request the instructor to carry out a detailed check that all questions have been marked and that the final grade has correctly been computed on the basis of the term work, final examination, etc.

**Rereads**

According to the Charter, students have the right, subject to reasonable administrative arrangements, “to an impartial and competent review of any mark” (hereafter “reread”). At the time the request for a reread is made, the student should have already met with the faculty member responsible for the course to review the mark, or made a reasonable attempt to do so.

Rereads can only be requested if a change upwards in the letter grade for the course is possible as a result of the reread. Assignments may only be reread if, together, they account for more than 20% of the course grade.

The reread by a second reader is a review of the mark, not the work assigned. It is the second reader’s task to determine whether the original mark is fair and reasonable, not to give the work a totally new assessment.

1. **The time limit for requesting a reread is within 30 days after posting of the final marks for the course. However, in the case of work which has been graded during the course and returned to the student, students must indicate in writing to Graduate and Postdoctoral Studies within 5 working days of receiving the graded work their intention to request a reread. This intention must be confirmed within 30 days of the posting of the final marks for the course.**

   (Note: Material that is returned to a student cannot be reread unless arrangements have been made to ensure that the material has not been changed subsequent to the original grading; for example, the student can make a copy for the professor to retain either before handing the material in or immediately upon receiving it back from the instructor or at the point where the professor and student review the work together.

   Instructors are strongly advised to write their corrections in red pen and to write comments which help the student to understand the mark assigned.)

2. **The request for a formal reread must be made by the student in writing to Graduate and Postdoctoral Studies and should specify the reasons for the request. It should include a statement indicating that the student has already met with the faculty member responsible for the course to review the mark or indicating why this has not been possible. The reread fee ($35 for an exam, $35 for a paper, $35 for one or more assignments, to a maximum of $105 per course) will be charged directly to the student’s fee account after the result of the reread is received. No fee will be charged if there is a change upwards in the letter grade for the course.**

3. **Administration of the reread is handled by Graduate and Postdoctoral Studies, not by the department. GPS will contact the department to obtain the work to be reread, a list of potential readers, and details of the marking. All communication with the second reader is conducted by GPS.**
The second reader is given the original assignment, with marginalia, corrections, summary comments and mark intact, as well as any notes from the instructor pertinent to the general nature of the course or the assignment and grading schemes, etc.

4. The student's and the instructor's names are blanked out to reduce the possibility of prejudice and to help meet the requirement of the Charter of Students' Rights that the review be impartial. The rereader's name will not be made known to the student or instructor at any time; the student's name will not be made known to the rereader at any time.

5. The second reader should support his or her assessment with a brief memorandum to Graduate and Postdoctoral Studies. As a result of the reread process, the grade may become higher or lower or remain unchanged. The grade submitted by the second reader shall replace the original grade. The reread grade cannot be challenged.

In the case of requests for rereads of group work, all members of the group must sign the request, indicating that they agree to the reread. In the event that members of the group are not in agreement, the written request should indicate which students are requesting the reread and which students do not wish for a reread. In such cases, the outcome of the reread (whether positive or negative) will affect only the students in favour of the reread. Neither the reread grade nor the decision to opt in or out of the reread can be challenged.

6. The new grade resulting from the review will be communicated to the student in a letter from Graduate and Postdoctoral Studies, with a copy to the academic unit.

Prepared by the Committee on Graduate Programs, Supervision and Teaching
Approved by Council of the Faculty of Graduate Studies and Research, May 12th 1995

10.6 Health and Parental/Familial Leave of Absence Policy

A leave of absence may be granted by Graduate and Postdoctoral Studies for maternity or parenting (interpreted according to McGill’s “Parental Leave Policy” for non-academic staff) reasons or for health reasons.

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 must request a leave in writing to their department and submit a medical certificate. The department shall forward the request to GPS.

During a leave of absence for parental or familial reasons, a student will not be eligible to take courses but he/she may request and expect guidance on thesis and research work and will have free access to the University's academic facilities. Library services will continue to be available by registering at the Circulation Desk of the Humanities and Social Sciences Library (McLennan-Redpath). In special circumstances, familial leave may be considered by GPS for a student when a close family member is ill.

During a leave of absence for health reasons, a student will not be eligible to request guidance on thesis and research work or to take courses. He/she will not have access to the University’s academic facilities but Library services will normally continue to be available by registering at the Circulation Desk of the Humanities and Social Sciences Library (McLennan-Redpath).

A medical certificate must accompany such leave requests.

Council of FGSR, March 1999

Please refer to section 6.1.10 “Leave of Absence Status” for information regarding registration of graduate students and Postdocs on such leaves.

10.7 Failure Policy

Please refer to section 6.12 “Failure Policy”, for information regarding the policy and procedures to follow in cases of failure.

10.8 Guideline on Hours of Work

In order to maintain full-time status, a graduate student should not work more than 180 hours per term over 15 weeks with 12 hours per week.

11 Resources for Study and Research

11.1 Libraries

The McGill Library consists of 13 branch libraries and special collections located across both campuses. Numbering over six million items, the Library's vast holdings include 2.5 million books, textbooks and course-readers, thousands of journal titles, vast manuscript and pictorial collections and thousands of sound and video recordings. The Library's e-resources are extensive, and include almost 50,000 e-journals, multimedia, and over one-million ebooks on subjects ranging from early English literature to nutrition.

A comprehensive website (www.mcgill.ca/library), an online catalogue, and a wide range of library services link the Library's resources to those who need them for learning, research and scholarship. Hundreds of databases on topics from art history to zoology guide users to relevant journal articles and research materials, while subject guides on topics like chemistry and social work provide comprehensive and clear direction for users undertaking research. The Library's website also provides access to items such as past examination papers, McGill theses, and foreign newspapers. All electronic resources are available for use from home using the VPN (Virtual Private Network) or laboratories anywhere on the campus - access any time, any place.

Although opening hours vary, most libraries are open up to 84 hours per week, and several branch libraries extend opening hours during examination periods, including 24-hour-access to the Humanities and Social Sciences Library. Hundreds of computers are available for email, word-processing, accessing online courses, researching library materials, preparing assignments and searching the Internet. Designed to enhance the learning experiences of diverse users, the Library's facilities offer a variety of comfortable and attractive spaces, including quiet individual study areas, dynamic e-zones, and group study rooms that can be booked for use. Wireless access is available throughout the library, and all libraries have card-operated printing and copying facilities. Special facilities are available for vision- and hearing-impaired users. Laptops are also available for loan.

You can use special library services such as the Electronic Data Resources Service, which supports empirical and statistical research. Unique scholarly materials from the Rare Books and Special Collections are being digitized and theses are being submitted electronically. The Course Reserve collection in each branch library includes copies of textbooks and high-demand items on course reading lists. You can borrow materials from any library and return them anywhere across the system.

If you need material not owned by McGill University Library our Interlibrary Loan & Document Delivery Service will source it for you and pickup is available at any branch.

11.2 University Archives

The McGill University Archives (MUA) acquires, preserves and makes available to researchers (including students) more than 5,000 metres of records dating from 1797 to the present. These records document McGill University faculty, research, alumni and student organizations, and certain Montreal-based organizations.
Archived media include textual records, photographs, slides, audio-tapes, film, video, plans, University publications, and artifacts. The MUA acquires private records to support University research goals and manages the University’s corporate memory and information assets through its Records Management Program. This program regulates the flow of administrative records and protects vital evidence of University functions and activities according to Quebec archives and records legislation.

The MUA Reading Room is open Monday to Friday, from 9:00 a.m. to 12:30 p.m. and from 1:45 p.m. to 4:45 p.m.; however, appointments are recommended. The MUA website features virtual exhibitions, tools to search the MUA holdings, and digital collections including the largest campus database of digitized images.

McGill University Archives
McLennan Library - Ground Floor
Telephone: 514-398-3772
Fax: 514-398-8456
Website: www.archives.mcgill.ca

11.3 Museums

11.3.1 Redpath Museum

The Redpath Museum’s mandate is to foster the study of the history and diversity of the natural world, including geological, biological and cultural diversity. Its collections have been growing for over a century, and provide resources for research and for graduate and undergraduate education in biology, geology, anthropology and other fields. Its largest collections include fossils from the ancient sea floor of eastern Quebec, the oldest land plants, a vast range of minerals, molluscs from around the world, Egyptian and classical antiquities, and artifacts from Central Africa. The Museum also houses research laboratories and classrooms.

The Museum welcomes McGill students and staff to visit its permanent exhibit, which presents the history of life through the ages illustrated by material from Quebec and neighbouring regions, as well as displays that feature the mineral and mollusc collections. The Museum also features an ethnology gallery devoted to cultures throughout the world, including ancient Egypt, classical Greece and Rome, Asia, and Africa.

859 Sherbrooke Street West
Telephone: 514-398-4086
Email: redpath.museum@mcgill.ca
Website: www.mcgill.ca/redpath

11.3.2 McCord Museum of Canadian History

The McCord Museum houses one of the finest historical collections in North America. It possesses some of Canada’s most significant cultural treasures, including the most comprehensive collection of clothing – comprising over 16,000 garments or accessories – made or worn in Canada; an extensive collection of First Nations artifacts – the most important of its kind in Quebec with a corpus of over 13,000 objects from across Canada; and the renowned Notman Photographic Archives, which contain over one-million historical photographs and offer a unique pictorial record of Canada from pre-Confederation to the present. The McCord also houses paintings by renowned artists such as Théophile Hamel, Cornelius Krieghoff, James Pattison Cockburn and George Heriot. The Museum’s Textual Archives include some 185 linear metres of documents relating to Canadian history. Finally, the McCord’s website (www.mccord-museum.qc.ca) features award-winning virtual exhibitions, innovative learning resources and a vast, searchable database of information on the Museum’s collections.

Exhibitions at the McCord provide innovative interpretations of the social and cultural history of Montreal, Quebec and Canada. In addition to guided tours, school programs, cultural activities and lectures, the McCord offers a range of services including the Museum Café and the boutique.

Researchers welcome by appointment.

690 Sherbrooke Street West
Telephone: 514-398-7100
Email: info@mccord.mcgill.ca
Website: www.mccord-museum.qc.ca

11.3.3 Lyman Entomological Museum and Research Laboratory

Located on the Macdonald Campus, this institution has the largest insect collection of any Canadian university, and is second in both numbers of species and specimens only to the Canadian National Collection of Insects in Ottawa. It is not generally open to the public since its main functions are research and teaching, not exhibitions. However, tours are available by appointment to interested parties.

Telephone: 514-398-7914

11.3.4 Other Historical Collections

In addition to the above, there are other collections and exhibits of a specialized nature, ordinarily open only to students. For access, contact the appropriate department. These include the Anatomical and Pathological Museums.

The Physics Department has two specialized collections that may be viewed by appointment. The Rutherford Museum contains original apparatus and other items used by Professor Ernest Rutherford in his Nobel Prize-winning research at McGill University on radioactivity (1898-1907). The McPherson Collection comprises a wide range of historical apparatus and instruments used for measurements and investigations, with special emphasis on 19th-century physics.

12 For your Information Technology (IT) needs

McGill’s IT Services website is your one-stop shop for all central IT services at McGill. Visit www.mcgill.ca/it to:
• Get IT service descriptions and read FAQs.
• Find detailed information such as service cost and service availability as well as instructions on how to access the service and get IT help and support.
• Find system availability, down times and new service announcements posted under Announcements and Events.
• Search the McGill IT Knowledge Base.

Some of the basic IT services to get you started are:
• “Logging In”, “myMcGill (the University portal)”, “myCourses”, “Getting Connected” and “Safe Computing”.

12.1 Logging In

You need to use your McGill Username (usually in the form of firstname.lastname@mail.mcgill.ca) and McGill Password to access many central IT services including: myMcGill, myCourses, email, wireless, Virtual Private Network (VPN), and McGill’s dialup access service (DAS).

To find out your McGill Username and set your McGill Password:
1) Log in to Minerva (using your 9-digit McGill ID number and your PIN).
2) Go to Personal Menu > Password for McGill Username.
3) Follow the onscreen instructions.

12.2 myMcGill (the University portal)

myMcGill is the central access point where you:
• Read your email.
• Check myCourses.
• Get direct links to Minerva to view and update your student records and account information.
• Search the McGill Library Catalogue.
• Keep abreast of the latest McGill news.
• And more.
Click myMcGill at the top-right corner of any McGill website (www.mcgill.ca) and sign in using your McGill Username and McGill Password.

12.2.1 Browser compatibility
myMcGill currently supports the latest versions of the following browsers:
- Internet Explorer (IE) (Windows).
- Firefox (Mozilla) (Windows/Macintosh).
- Netscape (Windows).

12.3 myCourses
Many of your courses will have online materials or activities such as assignments and readings, the syllabus, project guidelines, discussion forums, calendars, etc.
Access your online course content via myCourses at www.mcgill.ca/mycourses or through myMcGill.
- Sign in using your McGill Username and McGill Password.
- Click myCourses (WebCT Vista) to enter the site.
- Verify your browser settings using the Check Browser utility at the top-right corner of the page.
Find more information on myCourses for students at: www.mcgill.ca/it.

12.4 Email
Your McGill Email Address (usually in the form of firstname.lastname@mail.mcgill.ca) is the official way the University communicates with you by email. For information on the policy see section 6.23, “Email Communication”. Access your email at http://exchange.mcgill.ca or through the myMcGill portal using your McGill Username and McGill Password. View your McGill Username, McGill Email Address and set up your McGill Password on the Minerva Personal Menu.

12.5 Online Student Directory
Opt in to the student directory and make it easier for your fellow classmates to contact you. Find more on this service at www.mcgill.ca/directory/students.

12.6 Getting Connected
Access to the following services is through your McGill Username and McGill Password. You can find more details on the following services at www.mcgill.ca/it:

Wireless
Access the Internet using your laptop or other mobile device from virtually anywhere on campus, through the McGill Wireless network. Log in to the Wireless network using your McGill Username and McGill Password.

Virtual Private Network (VPN)
If you connect to the Internet with an Internet Service Provider (ISP) other than McGill’s DAS, you need to establish a VPN connection to access McGill restricted sites and resources (e.g., library databases). Log in to VPN using your McGill Username and McGill Password.

Dialup Access (DAS)
If you do not have a high speed ISP, use McGill’s dialup service and connect to the Internet using your telephone line and a modem. Log in to DAS using your McGill Username and McGill Password.

McGill Residences Telecommunications
For students living in McGill Residences and McGill Off-Campus Residences, there is a Voice and Data (wired and wireless) service.

12.7 Safe Computing
Computing Safety iCare Clinic: Attend this free clinic and learn how to prevent viruses, spyware, adware and other malicious programs from infecting your computer. Find out how to register for IT Training at www.mcgill.ca/it.

Free software: Download free antivirus and other software from McGill’s Software Licensing site at www.mcgill.ca/software. Find out more about software licensing and protecting your computer at www.mcgill.ca/it.

Note: Be sure to uninstall any previous antivirus software from your computer before installing new antivirus software.

Ten tips for keeping information secure: Read the University’s information security tip sheet found at www.mcgill.ca/infosec/tips.

12.8 Set up your security questions in myMcGill
Setting up your security questions and answers for your McGill Password allows you to use the Forgot Password? link found on several McGill applications, should you forget it.
Once you have set up your McGill Password in Minerva, log into myMcGill (http://my.mcgill.ca) and click the McGill Password Security portlet. Follow the onscreen instructions to set up your own security questions and responses.

12.9 Need Help?
Welcome New Students
Take an interactive guided tour of IT services at www.mcgill.ca/it, go to Welcome New Students.

McGill IT Knowledge Base
Search the Knowledge Base at http://knowledgebase.mcgill.ca/it for answers to commonly asked questions about IT.

12.9.1 Getting Help
Contact the ICS Service Desk by submitting your request via a web form at http://webforms.mcgill.ca, or find ICS Service Desk information at www.mcgill.ca/it.

13 Research Policy, Patents, Postdocs, Associates, Trainees

13.1 Policy on Research Ethics

13.2 Regulations on Research Policy
13.3 Policy on Student Involvement in Research

The following policy relates specifically to undergraduate and graduate students who are engaged in research as part of their university programs. Some sections also apply to those cases where an investigator enlists the services of an inexperienced person as assistant, technician, trainee, etc., in connection with a research project.

Health and Safety
1) It is the responsibility of the investigator to implement all possible measures that will ensure the health and safety of his/her research colleagues. Such measures include:
   a) Strict adherence to the safety procedures set forth in the regulations of the building in which the research is being carried out.
   b) Careful training of all new personnel in the correct usage of equipment and materials.
   c) Provision of adequate protective clothing, first aid kits, etc. and their regular inspection.
   d) Clear precautionary labelling of containers of hazardous materials.

2) Students, especially undergraduates, tend to have only temporary involvement with a research project and may be absent during routine safety drills. Particular attention should be given to the instruction of each beginning student. Solitary work in a laboratory containing potential hazards should be strongly discouraged. Research projects shall avoid a requirement for solitary after-hours work.

3) Where research projects involve the use of specially hazardous materials (e.g. radioactive, carcinogenic or poisonous chemicals) departments shall ensure that students have signed a statement that they have received and read appropriate health and safety information and shall forward such statements to the Building Director. [Refer to McGill University Manual of Radiation Safety, June 1984.]

4) In cases of emergency, both staff and students are required to follow instructions issued by the Building Director or delegate.

Academic Considerations
1) When a student assists in a research project, a clear distinction should be made between work for which the student is paid, and research training which contributes to the student's academic program.

2) As a general rule, paid work should not be considered eligible for credit towards an undergraduate course. In some departments, different arrangements have traditionally been held; in such departments open discussion should ensure that one policy is applied uniformly throughout the department and disseminated to students.

3) When a graduate student is assigned a salary or partial support by the investigator (e.g., from an operating grant or similar fund controlled by the investigator) a clear agreement should be made as to the duties expected of the student in conjunction with the investigator's own research project vis-à-vis the work contributing to the student's thesis.

Secrecy
1) When a student begins working with an investigator who may be funded in whole or in part by contracts, consulting agreements or grants from outside agencies, a clear agreement should be made at the outset as to the accessibility of research findings for publication.

2) If at any time, during the program, the student's own research discoveries or those of other group members lead to a need for limitation on free communication, there should be full discussion by the whole group in concert with the administrative supervisor of the department, institute or faculty, of the reasons for such a proposal. In the event that a consensus is not reached, the matter shall be referred to the Vice-Principal (Research and International Relations) for resolution.

3) When a thesis has been completed and satisfactorily examined, the student may wish to delay its publication or deposition in the McGill and National Libraries for a short period. Such requests may be made, in writing, to Graduate and Postdoctoral Studies. Delays of one, or in exceptional cases, two years may be approved.

Proprietary Research*

* Section 8, 9 & 10 of the Regulations Governing Conflict of Interest in Proprietary Research, November 1985.

1) The enterprise in which a member has an economic interest may not employ University students. However, such an enterprise may enter into contractual agreements to this effect with the University or be a partner with the University within a program of one of the granting agencies. Where such enterprise has made a grant, gift or donation to the University, no payment out of such grant, gift or donation shall be made to the interested member without prior approval of the Principal.

2) Members intending to acquire an economic interest in an enterprise shall inform all students who may be affected by their actions at the earliest possible date. Students shall immediately be free to seek the advice of the departmental Chair, the Dean of the Faculty, or the Dean of Graduate and Postdoctoral Studies.

3) Where students are employed by such enterprise, the member having an interest therein shall ensure that students who have already done substantial work under their academic supervisor shall be able to continue in their chosen area of research. Where it is possible to differentiate between the project of the thesis student and that of the enterprise in such a way that the student may continue the thesis project unhampered, the Dean of Graduate and Postdoctoral Studies shall arrange for the appointment of a co-supervisor unrelated with the enterprise.

Responsibilities of the Student

Academic freedom brings responsibilities to students and staff alike. Students should realise that the good name and research reputation of the University and its professors rests in large measure upon the quality of research done by its students. Students, as members of the University, have the responsibility to follow the principles set out in the University Research Policy and in the regulations of Graduate and Postdoctoral Studies.

Responsibilities of the University

1) The University shall inform students of all appropriate regulations and policies concerning research.

2) The University shall provide a safe research environment for student researchers.

13.4 Guidelines for Research Involving Human Subjects

All research involving human subjects conducted at or under the auspices of McGill University requires ethics review and approval by a McGill Research Ethics Board (REB) or an REB of a McGill-affiliated hospital or an REB recognized by a formal agreement with the University, before the research may begin. Research involving human subjects covers a wide range of activities, encompassing the humanities, the social and behavioural sciences, as well as the biomedical sciences. It may include, but is not limited to, projects where data are derived from: the collection of information through any interaction or intervention with a living individual;
the secondary use of data previously collected from human subjects; identifiable private information about an individual; human remains, cadavers, human organs, tissues and biological fluids, embryos or fetuses. The researcher is responsible for consulting with the REB to clarify what types of activities must be reviewed and what exceptions may exist.

The requirement for ethics review and approval by a McGill approved REB applies to:

- all research conducted by or under the supervision of any member of McGill University, whether the research is funded or non-funded, or conducted on University premises or elsewhere. For the purpose of this document, a member of the University is defined as including academic and non-academic staff, sessional instructors, students, visiting or adjunct scholars, postdoctoral fellows, paid and unpaid research associates and assistants, and any person in a like position, when acting in connection with their institutional role. This applies to new faculty even though their current research may have received ethics approval at a previous institution.
- all student research projects conducted as part of thesis or course requirements.
- pilot studies and feasibility studies.
- all research or subject recruitment conducted by organizations or individuals who are not members of McGill University while on University premises or using University facilities, equipment, or resources (including human resources).
- research that involves the use of the University’s non-public information to identify or contact human research subjects.

Researchers must be familiar with the McGill Policy on the Ethical Conduct of Research Involving Human Subjects which describes the administrative structures, procedures and requirements for the conduct of human subject research by McGill members. Researchers must refer to their designated REB for specific guidelines, submission deadlines, application forms, etc. All documents, including the Student Guide to Ethics Review for Human Subject Research, and information on each of the McGill REBs, can be found at www.mcgill.ca/researchoffice/compliance/human. Ethics approvals are only valid for a one-year period. Continuing review and approval is required annually for ongoing projects. If a project has been terminated, and ethics approval is no longer required, a termination form must be submitted to the REB. For further information the Research Ethics Officer can be reached at 514-398-6831.

13.5 Guidelines for Research with Animal Subjects

Policies
The Tri-council (CIHR, NSERC and SSHRC) has established policies requiring that all funded research involving animals complies with CCAC guidelines and policies, as well as applicable provincial laws. The Canadian Council on Animal Care (CCAC) requires that institutions conducting animal-based research, teaching or testing establish a functionally active Institutional Animal Care Committee governed by formal Terms of Reference that are defined in the CCAC Guidelines for the Care and Use of Experimental Animals.

The McGill University Animal Care Committee
The McGill University Animal Care Committee (UACC) is the University body responsible for ensuring the humane care and use of animals in research, teaching or testing. The Committee is responsible for ensuring University-wide understanding of, and compliance with, the applicable requirements concerning the procurement, care and use of animals at McGill University and its affiliated institutions. The University Animal Care Committee reports to the Vice-Principal (Research and International Relations). Its jurisdiction includes a) the teaching and research activities carried out on the premises or off-site of all persons in their capacity as faculty, staff or students of the University and its affiliated institutions b) all activities involving animals carried out on University/affiliated institutions premises, using the facilities, equipment or resources, by individuals or organizations who are not formally affiliated.

Facility Animal Care Committees (FACCs) are established for each affiliated hospital and each University campus using animals in research, teaching or testing. Each FACC ensures that all animals used in research, teaching or testing within its jurisdiction, are used and cared for in accordance with all applicable requirements.

The Animal Compliance Office (ACO)
The ACO is responsible for the regulatory oversight of the Animal Care and Use Program at McGill University and its affiliated institutions. Their professional and clerical staffs provide information and services on all regulatory affairs, training and health and safety programs for technicians, students and academic staff.

The Animal Resources Centre
The Animal Resources Centre serves as the major centre of expertise in laboratory animal science and medicine for the animal-based research and teaching activities at McGill University and its affiliated hospitals. The Centre is responsible for advising on the care and use of experimental animals throughout the University and affiliated hospitals. Their professional, technical and clerical staffs offer a comprehensive range of services to all teaching and research programs using experimental animals. The Centre also provides training and consultation in methods of animal experimentation and in laboratory science for technicians, students and academic staff through workshops, and through individual instructions.

Procedures for Obtaining Approval of Research Projects
All animal-based research must be peer-reviewed and approved by the appropriate FACC prior to the acquisition of animals and the start of the research, testing or teaching project. To permit review and approval by the FACC, a completed “Animal Use Protocol” form must be submitted at least two (2) months prior to starting a new project or to the expiration of an approved protocol. Animal Use Protocols are approved for a period of one year and renewed annually. Any change (such as procedures, research personnel, funding source or title) must be justified in an “Amendment Form” and approved by the appropriate FACC. All teaching, cloning projects, and those characterized as “Pain and Discomfort” level D will be referred to the UACC Ethics Subcommittee for further review and approval.

Research funds may be withheld by the University administration for projects that are in non-compliance with both University or CCAC guidelines and policies.

Forms can be obtained at www.mcgill.ca/researchoffice/compliance/animal/forms.

Occupational Health Program for Animal Related Activities
Activities involving the care and use of animals in research and teaching pose particular health risks not normally encountered in other activities. The magnitude of risk is dependent on the species involved and the nature of contact (direct or indirect) with animals, their tissues, excreta, body fluids, hair, animal cages and dander. In recognition of its responsibility to provide a safe working environment, McGill University has adopted a policy for protection of faculty, staff, and students from health risks which may result from working with animals or working in animal care activities. The program is optional but strongly suggested for all faculty, staff, and students working with lower species (rodents, fish, frogs, etc.). It is mandatory for all faculty, staff, and students working with non-human primates.

For further information, consult the following website: www.mcgill.ca/ehs/ohs.
Training of Animal Users
The CCAC has made training mandatory for faculty, staff, and students involved in animal research, testing and teaching. Every one listed in an animal use protocol must successfully pass the online McGill University course at www.animalcare.mcgill.ca. Additionally, all personnel who will be handling live rodents and rabbits need to take a hands-on workshop. For species other than laboratory rodents and rabbits, the person will need to have received training from an experienced person (who must meet approval by the Animal Care Committee). For farm animals, fish and wild animals, practical training is obtained through courses available at Macdonald Campus. Details can be obtained at www.animalcare.mcgill.ca/mactrain.htm. The approval of new Animal Use Protocols as well as renewals is conditional on personnel having the necessary training. Everyone listed in the personnel section needs to have passed the theory course and, if handling live animals, have passed the practical course specific to the species involved in the project.

For any further information, consult the UACC website (www.mcgill.ca/researchoffice/compliance/animal) or email animalcare@mcgill.ca.

13.6 Policy on Intellectual Property

13.7 Regulations Governing Conflicts of Interest in Proprietary Research

13.8 Safety in Field Work
This policy has been established in light of the fact that research and teaching activities performed outside of the University’s geographical boundaries may involve particular risks to the participants. It must be recognized that the risks associated with the work performed, the availability of University support services, the level of supervision, accessibility to emergency services, and local government legal requirements may differ significantly from activities carried out on University premises. Reasonable efforts must be made to ensure that all policies pertaining to the safety of University staff and students be used as minimum standards for field work.

The responsibility for ensuring these standards are considered rests on all persons who participate in the teaching and research activities in the field. The University expects those persons who directly supervise and carry out teaching and research in the field to inform the participants of these standards.

The following factors must be considered before undertaking field work:

i) the state of health and immunization of all participants;
ii) the risks associated with the work performed and the potential for contact with chemical, physical and biological agents;
iii) the procedures for responding to accidents involving injuries, damage to property and equipment, and spills or leaks of hazardous materials;
iv) the availability of first aid care and supplies, and access to emergency medical treatment;
v) the environmental impact of the work performed;
vi) the local government legal requirements related to safety;
vii) the provision of training for all participants in field work regarding the risks associated with such work and the applicable safety measures.

Insurance Considerations for Field Work
Introduction
The following is a brief outline of the types of insurance which should be considered when undertaking field activities. Included is a description of the various policies which the University maintains, as well as additional coverages which are available through separate placement as necessary. For practical reasons, these descriptions are necessarily general, and any specific questions should be directed to the Risk Management and Insurance Department (514-398-6251).

Property Insurance
Direct physical loss or damage to University-owned equipment and materials is insured under a master policy which covers most situations of fortuitous property loss while located on University property. Coverage for the equipment when removed from University premises is available by contacting the Insurance Office. This coverage can extend to non-owned equipment as well.

Personal property of staff or students is not insured by the University. If desired, individuals should make separate arrangements in order to cover against loss.

Liability Insurance
The purpose of liability insurance is to protect against lawsuits arising from accidental or unintended occurrences to someone else’s person or property. The University’s Comprehensive General Liability Policy covers all faculty, staff and students while they are performing any activity pertaining to their academic and/or employment duties, including field activities. This policy will defend and indemnify against losses which arise by reason of liability imposed by law.

This policy applied on a worldwide basis and insures specifically against bodily injury, personal injury, death or damage to the property of others. It includes the personal liability of an individual insofar as the conduct which caused the loss was part of the individual’s employment or academic duties.

Automobile Insurance
When using automobiles or similar vehicles for field work purposes, special care must be taken to comply with local laws and regulations. The University is unable to provide insurance for vehicles outside Canada and the United States, even though rented or purchased in the University’s name. As a result, insurance coverage must be arranged locally to comply with jurisdictional requirements.

When renting vehicles or a short-term/worldwide basis, it is recommended that the Collision Damage Waiver (CDW) be declined in all cases where the corporate American Express card is used as payment. However, third party liability insurance is not considered optional coverage and should form part of the general rental costs. It would be prudent to confirm this fact.

Accident Insurance for Visitors and Students
The University can provide limited Accidental Death and Dismemberment Insurance, including emergency medical coverage, not only for visitors to Canada, but also for students travelling outside Canada. Specific arrangements should be made by contacting the Risk Management and Insurance Department.

Miscellaneous
Certain research situations require special insurance arrangements. The following is a listing of some of the special cases:

1. Use of aircraft: When leasing or chartering aircraft, special liability policies need to be arranged (this does not apply to passage on commercial aircraft).
2. War zones: Insurance policies generally have exclusions in some form regarding war risks, political insurrection, terrorism, etc., which require special policy placements.
3. Marine research: Trips involving ocean-going activities also necessitate special handling.
4. Cash: Whenever possible, it is recommended that credit cards or traveller cheques be used as opposed to carrying significant amounts of cash.
Operational By-Laws on International Research and Cooperation Contracts

The Board of Governors has approved operational by-laws on International Research and Cooperation Contracts.

The Risk Management and Insurance Department should be contacted during the development stage of the project, and prior to the signature of the contract for the following reasons:

1. To ensure that the scope of liability contractually acquired does not supersede the limits of existing insurance programs.
2. To review and establish what forms of local (foreign) insurance are necessary where representatives of the University are established on a long-term or permanent basis in a host country.

In closing, although it is important to include insurance protection for all field situations, common sense and practical considerations for eliminating or reducing risks should always take precedence.

While this document provides some general guidelines, please be aware that there are restrictions and exclusions in all insurance policies which may affect coverage. It is strongly recommended that all research supervisors refer specifically to the Risk Management and Insurance Department for clarification of University insurance coverage, and any assistance in arranging whatever special additional coverage may be required.

13.9 Procedure to Obtain Research Support

When a member of the University staff wishes to undertake research involving the use of the University’s facilities, or when the funds are to be used to support activities in which students or Postdocs are to be engaged as part of their educational experience, the University considers the activity to be part of its pattern of research. They should refer to guidelines on “Procedures Concerning Research Support - Part II” of the Guide to Sponsored Research at McGill University available on the web at www.mcgill.ca/researchoffice/policies/sponsored/overview/support or contact the Office of the Vice-Principal (Research and International Relations) at 514-398-3991.

13.10 Research Grants Office (RGO)

The Research Grants Office is a centralized office that acts as liaison between McGill researchers and external granting agencies/sponsors. RGO is responsible for providing information on sources of funding to the research community at large; assisting principal investigators in identifying research funding opportunities; maintaining and expanding the GENIUS database of research expertise at McGill and its affiliated hospitals; assisting faculty in the preparation and submission of applications; assuring compliance by the University with sponsors’ policies and requirements; interpreting for faculty the regulations of the granting agencies; clarifying University policies and procedures for faculty and sponsors; and negotiating the terms and conditions of awards, whenever required.

The Research Grants Office authorizes the Research Restricted Funds Office to open, renew and revise all internal and external research grants that require that all required information is on file and complies with the University and Agency policies, regulations and procedures. RGO is also responsible for preparing the annual SIRU report on research funding on campus and at the affiliated hospitals for reimbursement of indirect costs from the Quebec Government. The Office is also responsible for producing annual research statistics for the University, granting agencies, government officials, etc.

It also administers all Internal Research Grants Programs of the Office of the Vice-Principal (Research and International Relations).

13.11 Office of Technology Transfer (OTT)

Reporting to the Vice-Principal of Research and International Relations, the Office of Technology Transfer is the business office that manages the commercialization of intellectual property emerging from McGill University and its affiliated hospitals. The OTT operates at the interface between the University and industry with the purpose of commercializing inventions and discoveries into tangible products, services or processes that benefit the community and society at large. The OTT promotes awareness of matters of intellectual property among University researchers, fosters business relationships with the private sector, the investment community as well as government agencies on the national and international stage; thereby promoting the University's longstanding reputation as a world leader in cutting edge research. This mission ensures a positive impact from research investment and secures new investment dollars in basic and applied research. The Office of Technology Transfer is staffed with experienced professionals with advanced degrees and extensive research and business experience in academic institutions and in the private sector. The repositories of OTT's specialties include the following:

1. Sponsored Research

The OTT negotiates contractual agreements with companies and organizations wishing to engage the specialized research capabilities of McGill University and its affiliated hospitals. These organizations may be government agencies, the private sector as well as non-profit enterprises. The OTT ensures uniform agreements consistent with guidelines, principles, and policies established by contracting agencies as well as the policies of McGill University. Researchers are encouraged to consult the OTT website www.techtransfer.mcgill.ca.

2. Intellectual Property

McGill's Policy on Intellectual Property provides the framework by which inventions and discoveries are managed and commercialized (www.mcgill.ca/files/secratariat/PolicyonIntellectualProperty.pdf). University researchers should promptly disclose any invention where commercial potential is recognized. When a Report of Invention is submitted to OTT, its staff undertakes extensive due diligence and evaluation. Where warranted the intellectual property is protected by filing letters of patent or other appropriate measure, including copyrights.

3. Commercialization of Intellectual Property

"Commercialization" generally refers to the translation of intellectual property assets into tangible products, services or processes. Through its extensive network of private sector partners, the OTT promotes technology transfer and the commercialization of innovations and inventions with potential for socioeconomic impact. Further, the OTT provides guidance to entrepreneurial researchers and assists in the process of creating new companies and formulating contractual agreements with venture capital. The principal offices of the Office of Technology Transfer are located at 1555 Peel Street, 11th floor, Montreal, Quebec, H3A 3L8, Canada. In addition, field offices are located in the affiliated hospitals and on both campuses.

Telephone: 514-398-4200 Fax: 514-398-1482

13.12 Office of International Research (OIR)

The Office of International Research (OIR) plays a strategic role within McGill University in assisting and enhancing international collaborations and outreach. International research and development projects fall under the responsibility of the Vice-Principal (Research and International Relations), who mandates OIR to act as the authorized representative of the University and to ensure that existing guidelines, principles and policies are followed.

OIR provides assistance from project inception to completion by supporting faculty members across McGill's two campuses in all their international activities ranging from fundamental and applied research collaborations, capacity building projects and faculty travel grants to the delivery of teaching programs abroad.
OIR has four main areas of responsibility:
1. Liaison with funding agencies and promotion of the University’s international activities and profile to domestic and foreign partners;
2. Coordination and guidance during the preparation of proposals in highly competitive calls;
3. Leadership in negotiating contractual terms and conditions with project partners and funding agencies; and
4. Operational and financial oversight of McGill’s international projects. This tracking and advisory function ensures efficient management and allows project teams to dedicate themselves to the academic aspects of their project.

The Office identifies new and non-traditional sources of funding and has been very successful in diversifying the pool of funding agencies supporting international activities at McGill. It is also responsible for reviewing and establishing general memoranda of understanding.

Office of International Research
1555 Peel Street, 11th floor
Telephone: 514-398-4197
Fax: 514-398-6878
Email: francois.carrier@mcgill.ca
Website: www.mcgill.ca/international

13.13 Postdocs
See section 9.1 “Postdocs” for information on Postdoctoral Research.

13.14 Research Associates
A Research Associate is a senior career researcher who usually works independently, in most cases has a Ph.D. or equivalent, and is often supported directly by outside granting agencies.

14 Governance
(As of July 2009)

14.1 Visitor
The Governor General of Canada
Her Excellency The Right Honourable Michaëlle Jean

14.2 Board of Governors
Robert Rabinovitch; B.Com.(McG.), M.A., Ph.D.(Penn.)
Chair
H. Arnold Steinberg; C.M., B.Com.(McG.), M.B.A.(Harv.), LL.D.(McG.)
Chancellor
Heather Munroe-Blum; O.C., B.A., B.S.W.(McM.), M.S.W.(W. Laur.), Ph.D.(N. Carolina)
Principal and Vice-Chancellor

Members
Roshi Chadha
Stuart (Kip) Cobbett; B.A., B.C.L.(McG.)
Lili de Grandpré; B.A.(Western), M.B.A.(McG.)
Darren Entwistle; B.Econ.(C’dia), M.B.A.(McG.)
Kathy Fazel; B.Com.(McG.)
Morna Flood Consedine; B.A.(C’dia), M.Ed., D.Ed.(McG.)
Trevor Garland; B.Sc.(McG.)
Kohur GowriSankaran; B.A., M.A.(Madr.), Ph.D.(Bombay)
David N. Harpp; A.B.(Middlebury), M.A.(Wesl.), Ph.D.(N. Carolina)
Eric Maldoff; B.A., B.C.L., LL.B.(McG.)
Michael Meighen; B.A.(McG.)
Jan Peeters; B.Eng.(McG.)
Gary Pekeles; B.Sc.(McG.), M.Sc.(McG.), M.D.,C.M.(Baylor)
Michael Richards; B.A., B.C.L.(McG.)
Gerald Sheff; B.Arch.(McG.), M.B.A.(Harv.)
Ann Vroom; B.A.(McG.)
Thierry Vandal; B.Eng., M.B.A.(Montr.)
Allan Yost

Student Representatives
Students’ Society of McGill (1)
Post-Graduate Students’ Society of McGill (1)
Observers
McGill Association of Continuing Education Students (1)
Macdonald Campus Students’ Society (1)

14.3 Members of Senate
Ex-officio
The Chancellor
The Chair of the Board of Governors
The Principal and Vice-Chancellor
The Provost, Deputy Provost, and the vice-principals
The deans of faculties
The Dean of Continuing Education
The Dean of Graduate and Postdoctoral Studies
The Dean of Students
The Director of Libraries

Elected Members
63 members elected by the faculties, the University Libraries, the Board of Governors, and administrative and support staff.
Medical Residents or Postdoctoral Scholars Group (1)
Student Members (19)

15 Administration
Heather Munroe-Blum; O.C., B.A., B.S.W.(McM.), M.S.W.(W. Laur.), Ph.D.(N. Carolina)
Principal and Vice-Chancellor
Anthony C. Masi; A.B.(Colgate), Ph.D.(Brown)
Provost
Morton J. Mendelson; B.Sc.(McG.), Ph.D.(Harv.)
Deputy Provost (Student Life and Learning)
Kathleen Massey; B.A.(York)
University Registrar and Executive Director of Enrolment Services
Jana Luker; B.A.(Guelph), B.Ed., M.Ed.(Tor.)
Executive Director of Services for Students
William F. Foster; LL.B.(Auck.), LL.M.(Br. Col.)
Associate Provost (Policies and Procedures)
Jan Jorgensen; B.A., M.A.(N. Carolina), Ph.D.(McG.)
Associate Provost (Academic Staff and Faculty Affairs)
Martin Kreiswirth; B.A.(Hamilton), M.A.(Chic.), Ph.D.(Tor.)
Associate Provost (Graduate Education) and Dean (Graduate and Postdoctoral Studies)
Chandra Madramootoo; B.Sc., M.Sc., Ph.D.(McG.)
Associate Vice-Principal (Macdonald Campus) and Dean (Faculty of Agricultural and Environmental Sciences)
Sylvia Franke; LL.B., B.Sc.(Tor.)
Chief Information Officer
Line Thibault; L.L.B.(Montr.)
Interim Secretary-General
François R. Roy; B.A., M.B.A.(Tor.)
Vice-Principal (Administration and Finance)
Lynne B. Gervais; B.A.(C’dia)
Associate Vice-Principal (Human Resources)
Jim Nicell; B.A.Sc., M.A.Sc., Ph.D.(Windsor), P.Eng.
Associate Vice-Principal (University Services)

Marc Weinstein; B.A., B.C.L., LL.B.(McG.)
Assistant Vice-Principal (Development and Alumni Relations) and Director (University Campaigns)

Richard I. Levin; B.S.(Yale), M.D.(NYU)
Vice-Principal (Health Affairs) and Dean (Faculty of Medicine)

Sam Benaroya; B.Sc., M.D.,C.M.(McG.)
Associate Vice-Principal (Inter-Hospital Affairs)

Denis Thérien; B.Sc.(Montr.), M.Sc., Ph.D.(Wat.)
Vice-Principal (Research and International Relations)

Rima Rozen; B.Sc., Ph.D.(McG.)
Associate Vice-Principal (Research and International Relations)

Vaughan Dowie
Executive Head of Public Affairs
GRADUATE FELLOWSHIPS AND AWARDS
2009-2010

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Dean’s Welcome

To Graduate Students and Postdoctoral Fellows:

I am extremely pleased to welcome you to McGill University. With over 250 Doctoral and Master’s degree programs, McGill is committed to providing world-class graduate education and postdoctoral training in a full range of academic disciplines and professions. Graduate and Postdoctoral Studies (GPS) works in collaboration with the Faculties and other administrative and academic units to deliver the very highest level of teaching and research across the University. GPS is responsible for the admission and registration of graduate students, disbursing graduate fellowships, supporting postdoctoral fellows, and facilitating the graduation process, including the examination of theses.

As a student-centered research institution, McGill 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 central administration, Faculties, graduate students, professors, researchers, postdoctoral fellows, and staff to enhance the graduate and postdoctoral experience and provide a supportive, stimulating, and enriching academic environment.

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
1 Graduate and Postdoctoral Studies, Fellowships and Awards Section

1.1 Location
Graduate and Postdoctoral Studies Fellowships and Awards Section
James Administration Building, Room 400
845 Sherbrooke Street West
Montreal, Quebec, H3A 2T5 Canada
Telephone: 514-398-3990
Fax: 514-398-2626
Email: graduate.fellowships@mcgill.ca
Web: www.mcgill.ca/gps

1.2 Administrative Officers
Martin Kreiswirth; B.A.(Hamilton), M.A.(Chic.), Ph.D.(Tor.)
Associate Provost (Graduate Education) and Dean (Graduate and Postdoctoral Studies)
Heather Durham; M.Sc.(W. Ont.), Ph.D.(Alta.)
Associate Dean (Graduate and Postdoctoral Studies)
Fabrice Labeau; M.S., Ph.D.(Louvain)
Associate Dean (Graduate and Postdoctoral Studies)
Lisa deMena Travis; B.A.(Yale), Ph.D.(MIT)
Associate Dean (Graduate and Postdoctoral Studies)
Charlotte E. Légaré; B.Sc.(Montr.), M.Sc.(Sher.), M.B.A.(McG.)
Director (Graduate and Postdoctoral Studies)
Lissa B. Matyas; BFA, M.Sc.(C’dia)
Director (Recruitment and Retention)

2 Graduate Student Financial Support
McGill University is committed to helping graduate students finance their education and offers research students the most competitive and generous funding levels in Quebec. We are doing our utmost to provide you with a dependable income for the duration of your graduate studies, through both fellowships and bursaries. Upon admission to McGill, research students are automatically considered for funding and the details of your personalized support package will be confirmed once you have accepted our offer of admission. This funding comes from a number of sources, which may include McGill graduate fellowships, departmental and faculty awards, stipends from research grants or contracts, teaching and research employment, and, in certain cases, exemptions from tuition and ancillary fees. Course-based and professional Master’s students are eligible for need-based financial support and some internal fellowships and bursaries.

The following information is intended to help you to understand and provide detailed information on the various forms of graduate student support available at McGill. If you have any questions regarding graduate student support, the staff of the Fellowships and Awards section of Graduate and Postdoctoral Studies will be more than happy to help you find the answers.

External Fellowships
Funding from external sources may form an important complement to the funding package offered to you by McGill. In the 2007 funding year, Federal and Quebec government agencies granted over 20 million dollars in direct awards to students pursuing graduate studies at McGill. External Fellowships are available from various sources, including government departments and agencies, foundations and private companies. The value of awards offered by these agencies varies from $15,000 to $35,000 per year, and up to $50,000 for health professionals. These awards are often renewable. The deadlines to apply for the majority of external fellowships fall between October and November for fellowships tenable in September of the following year. To view a list of the agencies offering graduate student funding opportunities and individual application deadlines, please see section 3, “External Fellowships”.

For information on funding opportunities to support graduate study and research outside of Canada, please see section 8, “Exchange and Travelling Fellowships”.

Loans and Bursaries
Loans and/or bursaries are administered by the province in which you are legally resident, and are usually restricted to full-time, Canadian students (although certain categories of permanent residents may also be eligible). Most loans are granted exclusively on the basis of financial need. To find out more about the application procedures for government loan programs please see section 6, “Student Financial Assistance” or contact the McGill Student Aid Office at 514-398-6013 or by email at student.aid@mcgill.ca.

2.1 Information for International Students and Fellows
International students on study permits comprise up to 25 per cent of the graduate student population at McGill University and are integral to maintaining McGill’s standing as a world-class, research-intensive institution. McGill is committed to supporting its international students and addressing the unique financial concerns of this group. As an international student you may find yourself in a more difficult financial situation than your domestic peers, given that you are ineligible for certain awards and bursaries available only to Canadian students. To help offset this imbalance, McGill offers a number of tuition differential awards and international fee waivers to certain groups of students. These are available through several different programs.

1. MiDAs: McGill devotes approximately $3 million in funding directed at international doctoral students. Through the McGill International Doctoral Awards (MiDAs) program, McGill undertakes to pay the international tuition supplement on the student’s behalf, so that eligible international students will pay tuition equal to that of Quebec students. All international doctoral students whose tuition is not paid by an external source (such as through a fellowship involving the direct payment of tuition or a third-party billing contract) are eligible for this program. No application is necessary and each full-time, eligible student is automatically granted an award that makes up the difference between international and Quebec tuition.

2. McGill is allotted a number of Differential Fee Waivers (DFWs) from the Quebec Government that are allocated by individual departments to Master’s students in the summer term.

3. If you are in a program where your fees are assessed per credit, you may be exempt from the international tuition supplement for certain French language and literature courses.

4. All students from France and a limited number of students from countries party to bilateral agreements with Quebec may be granted exemptions from differential fees. With the exception of French citizens, students must apply to their home country for an exemption concurrent with their application for admission. Please consult section 2.1.1, “Exemptions from the International Tuition Supplement” to determine whether you are eligible for this program.

There are a number of funding programs aimed specifically at international students embarking on study in Canada. These
include: the Quebec Merit Fellowships for International Doctoral Students (Programme de bourses d'excellence pour étudiants étranger - PBEEE); the Canadian Commonwealth Scholarship and Fellowship Program; the Government of Canada Awards to Foreign Nationals; the Organization of American States; the Canada-U.S. Fulbright program; and the German Academic Exchange Program (DAAD). International students can also be nominated by McGill University for the new Vanier Canada Graduate Scholarship program (please refer to section 3, “External Fellowships” for further information). Applications for some of these programs must be made through the government of your home country, usually via the Ministry of Education.

Opportunities for employment for international students are now more plentiful than in past years, as immigration officials are authorized to issue work permits for off-campus employment under certain circumstances. For details concerning eligibility and procedure, please consult the International Student Services website at www.mcgill.ca/internationalstudents/workopportunities.

You can find additional information on opportunities for financial assistance available to international graduate students and fellows in the UNESCO publication Study Abroad, available on the web at www.unesco.org/education/studyingabroad/networking/study.pdf. The Canadian Bureau for International Education (CBIE) produces a free brochure entitled Destination Education Canada, available at www.destineducation.ca. As an international student you will also be pleased to learn that the new Post-Graduation Work Permit Program makes it easier than ever to gain employment in Canada following the completion of your degree. Through this program you can obtain a work permit tenable for three years, with no restriction on the type of employment and no requirement for a job offer or company sponsorship.

### 2.1.1 Exemptions from the International Tuition Supplement

**McGill International Doctoral Awards (MIDAs)**

All full-time international Ph.D./D.Mus./D.C.L. students registered in years 1 to 4 (Ph.D. 1 to Ph.D. 5) whose tuition is not paid by an external agency (such as through a fellowship involving direct payment or a third-party billing contract) are automatically granted McGill International Doctoral Awards (MIDAs). The value of the MIDA equals the difference between international and Quebec tuition; no application is necessary.

**Internal DFWs**

McGill University is allocated a number of Differential Fee Waivers (DFWs) that it allocates through the departments. Summer DFWs are allocated by nomination to eligible Master's degree students and students newly admitted into a Ph.D. program in the Summer term; Fall and Winter DFWs are automatically allocated to eligible doctoral students as part of the MIDAs program. Eligible students should enquire with their department for information regarding how to apply for these waivers in the Summer term.

**External DFWs**

Differential Fee Waivers are also available from a number of external sources, including the Ministère de l'Éducation, du Loisir et du Sport du Québec. Please note that the Quebec government grants Differential Fee Waivers to staff and dependants of consulates, foreign government offices, international governmental organizations, non-governmental organizations, refugees, immigrants with a work permit containing the case type 07, 08, 20, 22, 23 or 26 with the name of an employer and location that is necessarily situated in Quebec, and to those students in MELS-approved inter-university exchanges. For more information on how to qualify for Differential Fee Waivers under these provisions, please see this document: Politique relative aux droits de scolarité exigés des étudiantes et étudiants étrangers par les universités du Québec, available at the MELS website: www.mels.gouv.qc.ca/ens-sup/ens-univ/Politique_educant_etranger-2007.pdf.

International degree students in a program where fees are assessed per credit and who register in eligible French language and literature courses are exempt from the international supplement for those courses. Please note that the exemption of differential fees for students registered in French language and literature programs has been abolished.

A certain 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.

The exemption is granted in accordance with the applicable agreement on tuition fees and subject to its terms and conditions, which vary depending on each agreement. The exemption is valid for the normal length of the program of studies concerned (for instance, a Master's degree in Environmental Studies) at a post-secondary institution in Quebec, and is granted one semester at a time. From the first semester for which an exemption is granted at a designated institution until the program is completed, the exemption is renewable on a trimester-by-trimester basis as long as a student earns no fewer than 30 credits per year, complies with the applicable regulations, registers on a full time basis at least for the Fall and Winter trimesters and pays the tuition fees on the prescribed registration dates.

All French citizens and a limited number of citizens of a country in the list found at www.mels.gouv.qc.ca/ens-sup/ens-univ/droits_scolarite-A_pays-organisations.pdf are eligible for such exemptions.

To apply for an exemption of this type, a student must meet the following conditions: be a citizen of one of the aforementioned countries or governments; be admitted to a program of studies at a post-secondary institution in Quebec; be registered on a full-time basis according to the applicable rules at that institution; like any international student, be the holder of a valid passport and residence permit as prescribed by the applicable immigration rules; and, except for French citizens, be recommended for an exemption by the relevant authorities in his or her country – usually the department of education – according to the official procedure described in the next paragraph.

Foreign governments or the bodies that represent them must send, usually through their consulate in Quebec or their embassy in Ottawa, to the Direction des affaires étudiantes et de la coopération of the Ministère de l'Éducation du Québec, before June 15 of each year for the next autumn registrations and before November 15 for the next winter registrations, a list of the candidates that they recommend be exempted from the requirement to pay supplemental tuition fees, along with the proof of admission or registration for each new exemption proposed. The Ministère de l'Éducation then establishes, according to the provisions of the agreement, the final list of the persons to benefit from the exemption during the future trimester concerned. At least 80 per cent of the exemptions that are awarded must be for registrations in French-speaking institutions.

For more information and the necessary application materials, see this MELS website: www.mels.gouv.qc.ca/ens-sup/ens-univ/Politique_educant_etranger-2007.pdf.

### 2.2 Further Information

There are a number of web and reference sources available to complement the information contained in this guide:

**On the Web**

Graduate and Postdoctoral Studies (GPS) at McGill University regularly posts new information concerning graduate funding on our website at www.mcgill.ca/gps. We encourage you to visit this site to find detailed information on fellowship competitions, links to the sites of various funding agencies, and application forms for several McGill fellowships and awards.

McGill University also subscribes to the Community of Science (COS) database for sources of research funding, which you can access free of charge from any computer on the McGill domain. This database compiles a list of graduate and postdoctoral fellowships, scholarships, awards and prizes. You will find a link to the COS database at www.mcgill.ca/gps, under Information and Publications.
Reference Sources
We encourage you to consult one or more of the many reference books, materials, websites and directories on the subject of graduate funding. Many major libraries, including McGill’s McConnell Library, house publications listing fellowships and awards for graduate study, including:
- Annual Register of Grant Support
- Awards for Postgraduate Study at Commonwealth Universities
- Directory of Research Grants
- The Grants Register
- Study Abroad
- Scholarships, Fellowships and Loans

Should you have any questions or wish to speak to someone in person about your funding options, the friendly and knowledgeable staff in the Fellowships and Awards section of the Graduate and Postdoctoral Studies office at McGill are here to help you. All current and prospective McGill students are encouraged to visit, call, email or write to obtain further information on appropriate sources of funding for graduate education. If you take the initiative, GPS staff can help you go a long way toward finding satisfactory solutions for your funding needs.

3 External Fellowships
This section contains general information on the major funding agencies providing the majority of external awards to Canadian, Quebec or international students and postdocs. A large number of other sources provide external funding. A section on industrial fellowships offers information for students who wish to fund studies and research in partnership with non-university organization in the private (and sometimes public) sector.

3.1 Federal Fellowships for Canadian Students and Postdocs
Graduate and postdoctoral fellowships from the Federal Government granting Councils are normally open only to Canadian citizens or permanent residents of Canada for research-based studies at the Master’s, Doctoral and Postdoctoral levels. Exceptions on funding for international students will be covered in section 3.5, “External Fellowships for International Students and Postdocs”. Competition rules and regulations are updated annually and available on the agency websites.

Deadlines are normally in the Fall of the year prior to the academic year for which funding is requested. Several competitions involve a pre-selection by the university where the student is registered in the year or term of application. Students and postdocs may only apply to one federal agency per competition year (August to July); students in disciplines that border the mandate of several agencies (e.g., psychology, geography, cell and molecular biology) must select the agency that funds the specific proposed research.

**NSERC - NATURAL SCIENCES AND ENGINEERING RESEARCH COUNCIL OF CANADA**
Funds Master’s, Doctoral and Postdoctoral research-based studies in the Natural Sciences and Engineering.
- Master’s and Doctoral competitions involve a pre-selection by the university where the student was registered in the year of application. Postdoctoral applications are direct to the agency. Deadlines are normally in October.
- Value: $17,300 to $40,000.
- Agency information: www.nserc-crsng.gc.ca under For Students and Fellows and Online Services
- McGill pre-selection information: www.mcgill.ca/gps

**SSHRC - SOCIAL SCIENCES AND HUMANITIES RESEARCH COUNCIL OF CANADA**
Funds Master’s, Doctoral and Postdoctoral research-based studies in the Social Sciences and Humanities.
- Doctoral competitions involve a pre-selection by the university where the student was registered in the term of application. Master’s competitions involve a pre-selection by the university where the student was registered in the year of application. Deadlines are normally in October and November.
- Value: $17,300 to $38,000.
- Agency information: www.sshrc.ca under Apply for funding
- McGill pre-selection information: www.mcgill.ca/gps

**CIHR - CANADIAN INSTITUTES OF HEALTH RESEARCH**
Funds Master’s, Doctoral and Postdoctoral research-based studies in the Human Health Sciences (broadly defined).
- Doctoral and postdoctoral competitions are by direct application to the agency. Master’s competitions involve a pre-selection by the university where the student was registered in the term of application. Deadlines are normally in October and February (not all competitions allow for February applications).
- Agency information: www.cihr-irsc.ca under Funding Opportunities
- McGill pre-selection information: www.mcgill.ca/gps

**VANIER CANADA GRADUATE SCHOLARSHIPS**
The Vanier Canada Graduate Scholarships Program aims to attract and retain world-class doctoral students by supporting students who demonstrate a high standard of scholarly achievement in graduate studies and leadership skills. Vanier Scholarships have a stipend of $50,000 per annum, and are tenable for up to 36 months. The Vanier Scholarships are administered by the three federal founding agencies: the Canadian Institutes of Health Research (CIHR), the Natural Sciences and Engineering Research Council (NSERC), and the Social Sciences and Humanities Research Council (SSHRC). Candidates must be nominated by the Canadian University where they plan to study; McGill University undergoes a pre-selection process. Timing of future competitions is still in discussion at the time of publication.
- Value: $50,000.
- Agency information: www.vanier.gc.ca
- McGill pre-selection information: www.mcgill.ca/gps

3.2 Provincial Fellowships for Quebec Students and Postdocs
Graduate and postdoctoral fellowships from the Quebec Government granting agencies are normally open only to Canadian citizens or permanent residents of Canada who are Quebec residents for research-based studies at the Master’s, Doctoral and Postdoctoral levels. Exceptions on funding for international students will be covered in section 3.5, “External Fellowships for International Students and Postdocs”. Competition rules and regulations are updated annually and available on the agency websites.

Deadlines are normally in October of the year prior to the academic year for which funding is requested. Applications are online, with supporting documents sent directly to the agency. Students and postdocs may only apply to one Quebec agency per competition; students in disciplines that border the mandate of several agencies (e.g., psychology, geography, cell and molecular biology) must select the agency that funds the specific proposed research.

**FQRNT - FONDS QUÉBECOIS DE LA RECHERCHE SUR LA NATURE ET LES TECHNOLOGIES**
Funds Master’s, Doctoral and Postdoctoral research-based studies in the Natural Sciences and Engineering.
- Deadlines are normally in October.
- Value: $15,000 to $30,000.
- Agency information: www.fqmt.gouv.qc.ca under Bourses
- McGill supplementary information: www.mcgill.ca/gps
**EXTERNAL FELLOWSHIPS**

**FQRSC - FONDS QUÉBECOIS DE LA RECHERCHE SUR LA SOCIÉTÉ ET LA CULTURE**

Funds Master's, Doctoral and Postdoctoral research-based studies in the Social Sciences and Humanities. Deadlines are normally in October. (Some theme fellowships by ad-hoc calls for applications.)

*Value:* $15,000 to $30,000.

*Agency information:* www.fqrsc.gouv.qc.ca under *Les programmes*, then *Bourses*.

*McGill pre-supplementary information:* www.mcgill.ca/gps

**FRSQ - FONDS DE LA RECHERCHE EN SANTÉ DU QUÉBEC**

Funds Master's, Doctoral and Postdoctoral research-based studies in the Human Health Sciences (broadly defined). Deadlines are normally in October.

*Agency information:* www.frsq.gouv.qc.ca under *Consulter les programmes/Faire une demande*.

*McGill pre-selection information:* www.mcgill.ca/gps

**3.3 Provincial Fellowships for Students and Postdocs from Other Provinces**

Most fellowship opportunities from other provinces of Canada are only tenable in that province. For special programs providing exceptions to this general rule, please consult your province's funding agency website.

**3.4 Industrial Fellowships**

Some government agencies provide funding for research-based studies in an industrial setting.

**FQRNT-NSERC BOURSES EN MILIEU PRATIQUE BMP-INNOVATION**

*Eligibility:* Awards are based on a specific research proposal in the Natural Sciences and Engineering involving student, faculty supervisor and collaborating company. All applications require university endorsement and signed commitment from the sponsoring company. Open to Canadian citizens, permanent residents of Canada and International Students. This program replaces the NSERC IPS held in Quebec universities.

*Value:* Minimum $21,000 per year at the Master's level for up to two years and $27,000 per year at the Doctoral level for up to three years. The sponsoring company's contribution is a minimum of one third of the value.

*Deadline:* No FQRNT Deadlines. McGill Deadline: 3 months prior to the beginning of term of tenure.

*Application:* Fellowships Guide and application forms are available only on the web. A draft agreement satisfying the guidelines of McGill University, FQRNT and NSERC is available from the GPS Fellowship and Awards Section or at www.fqrnt.gouv.qc.ca/nateq/bourses/index.htm.

**FQRSC BOURSES EN MILIEU PRATIQUE BMP-INNOVATION**

*Eligibility:* Awards are based on a specific research proposal in the Social Sciences and Humanities involving student, faculty supervisor and collaborating company. Basic requirements are much like those of the regular FQRSC Postgraduate Scholarships. All applications require university endorsement and signed commitment from the sponsoring company. Open to Canadian citizens and permanent residents of Canada who are residents of Quebec.

*Value:* Minimum $21,000 per year at the Master's level for up to two years and $27,000 per year at the Doctoral level for up to three years. The sponsoring company's contribution is a minimum of one third of the value.

*Deadline:* No FQRSC Deadlines. McGill Deadline: 3 months prior to the beginning of term of tenure.

*Application:* Fellowships Guide and application forms are available only on the web. A draft agreement satisfying the guidelines of McGill University and FQRSC is available from the GPS Fellowship and Awards Section or at www.fqrsc.gouv.qc.ca under "Programmes", "Bourses".

**FRSQ BOURSES EN MILIEU DE PRATIQUE INDUSTRIEL**

*Eligibility:* Awards are based on a specific research proposal in the Human Health Sciences involving student, faculty supervisor and collaborating company. Basic requirements are much like those of the regular FRSQ Postgraduate Scholarships. All applications require university endorsement and signed commitment from the sponsoring company. Open to Canadian citizens and permanent residents of Canada who are residents of Quebec.

*Value:* Minimum $20,000 per year at the Master's level for up to two years and $30,000 per year at the Doctoral level for up to three years. The sponsoring company's contribution is a minimum of one half of the value.

*Deadline:* April 1, September 1, December 1.

*Application:* Fellowships Guide and application forms are available only on the web. A draft agreement satisfying the guidelines of McGill University and FRSQ is available from the GPS website: www.mcgill.ca/gps. The signing authority for the University will rest with GPS. Further information is available from the GPS Fellowships and Awards Section or at www.fqrsc.gouv.qc.ca under "Programmes", "Bourses".

**3.5 External Fellowships for International Students and Postdocs**

International students and postdoctoral trainees should verify with their country's educational authorities for funding opportunities to study abroad. In addition, various sources offer funding opportunities to study in Canada.

**CIHR - CANADIAN INSTITUTES OF HEALTH RESEARCH - FELLOWSHIPS PROGRAM (ONLY)**

Funds Master's, Doctoral and Postdoctoral research-based studies in the Human Health Sciences (broadly defined).

The Fellowships program for Postdocs and Health Professionals is open to international students and postdocs. Applicants must be post-Ph.D. or certified health professionals authorized to practice in their countries.

*Deadline:* Normally October and February.

*Agency information:* www.cihr-irsc.ca under Funding Opportunities, Fellowships

**FOREIGN AFFAIRS AND INTERNATIONAL TRADE CANADA**

The Department of Foreign Affairs and International Trade publishes several funding opportunities for international students interested in studying in Canada:

- The Commonwealth Scholarship Program
- The Government of Canada Award Program
- The Organization of American States Program
- Links to various programs regularly updated.

*Deadline:* Varies.

*Application:* Application information is available at www.scholarships.gc.ca/noncanadians-en.html

**PBEE - PROGRAMMES DE Bourses D'EXCELLENCE POUR ÉTUDIANTS ÉTRANGERS**

Merit Fellowships for International Students

*Eligibility:* The program, funded by the Quebec Ministry of Education, Leisure and Sports (MELS) and administered by FQRNT, is open to foreign doctoral students and postdoctoral trainees in all disciplines who are not Canadian citizens or permanent residents of Canada. Students must start in the program for which they receive funding between May and January. Doctoral candidates already in a Quebec university (e.g., already at McGill) are eligible to apply. For postdoctoral trainees and short visits, the students may not already be in the program. Due to the small number of nominations allowed per university, GPS will only consider applicants who have an overall First Class academic record (equivalent to 3.74/4.0 and up).

GPS website: www.mcgill.cagps. The signing authority for the University will rest with GPS. Further information is available from the GPS Fellowships and Awards Section or at www.fqrsc.gouv.qc.ca under "Programmes", "Bourses".
Value:
V1 (Doctoral): $25,000 per year for three years + differential fee waiver for entire studies + Quebec medicare coverage.
V2 (Postdoctoral): $35,000 per year for one year, non renewable
V3 (Short Visits): $3,000 per month for up to 4 months

Deadline: July: Students, with the help of their supervisors, must submit the McGill pre-selection form. If nominated by the university (each Quebec university can nominate four candidates per category), the student may have to submit additional documentation by the agency deadline of November. (Students should consult GPS website for exact dates.)

Application: Application information is available on the McGill GPS website at www.mcgill.ca/gps or on the FQRNT website at www.fqrnt.gouv.qc.ca.

VANIER CANADA GRADUATE SCHOLARSHIPS
The Vanier Canada Graduate Scholarships Program aims to attract and retain world-class doctoral students by supporting students who demonstrate a high standard of scholarly achievement in graduate studies and leadership skills. Vanier Scholars have a stipend of $50,000 per annum, and are tenable for up to 36 months. The Vanier Scholars are administered by the three federal founding agencies: the Canadian Institutes of Health Research (CIHR), the Natural Sciences and Engineering Research Council (NSERC), and the Social Sciences and Humanities Research Council (SSHRC). Candidates must be nominated by the Canadian University where they plan to study; McGill University undergoes a pre-selection process. Timing of future competitions is still in discussion at the time of publication.

Value: $50,000.
Agency information: www.vanier.gc.ca
McGill pre-selection information: www.mcgill.ca/gps

COUNTRY-SPECIFIC AGENCIES
List of Quebec Partner Countries: www.mels.gouv.qc.ca/ens-sup/ens-univ/droits_scolarite-a_responsables-pays.pdf
Germany: DAAD, www.daad.de
Mexico: CONACYT, www.conacyt.mx

DEVELOPING COUNTRIES FUNDING AGENCY
World Bank - www.worldbank.org/wbi/scholarships
PEO International Peace Scholarships for Women - www.peointernational.org/about

3.6 Associations and Private or Not-for-Profit Foundations
Various foundations offer graduate and postdoctoral funding opportunities. A short list is provided here, but it is in no way exhaustive.

ASSOCIATIONS AND FOUNDATIONS FUNDING ALL DISCIPLINES
Fondation Desjardins (Quebec Residents) - www.desjardins.com/fr/a_propos/profil/engagement/bourses
AUCC - www.aucc.ca
British Council - www.educationuk.org
CBIE - www.cbie.ca
Canadian Federation of University Women - www.cfuw.org
Institut de recherche en santé et en sécurité du travail du Québec (IRSST) - Any discipline related to work accidents - www.irsst.qc.ca
International Development Research Centre (IDRC) - www.idrc.ca
IODE War Memorial Scholarships for Doctoral Study - www.iode.ca
Mackenzie King Open Scholarships - www.mkingscholarships.ca
McGill pre-selection: www.mcgill.ca/gps

HEALTH RESEARCH ASSOCIATIONS AND FOUNDATIONS
CIHR maintains a list of funding opportunities in the Health Sciences: www.cihr.ca/e/783.html.

HUMANITIES AND SOCIAL SCIENCES ASSOCIATIONS AND FOUNDATIONS
Trudeau Foundation (Doctoral) - www.trudeaufoundation.ca;
McGill pre-selection: www.mcgill.ca/gps
Canada Council - www.canadacouncil.ca (Fine arts and performing arts)
Sauvé Scholars Foundation - www.sauvescholars.org
Roeher Institute Research Grants in the Field of Intellectual Disabilities - www.roeher.ca/english/services/scottish.html
Hannah Institute Fellowships for Postdoctoral Study in the History of Medicine - www.ams-inc.on.ca
Woodrow Wilson International Centre for Scholars - www.wilsoncenter.org

SCIENCE AND ENGINEERING ASSOCIATIONS AND FOUNDATIONS
Amelia Earhart Fellowship Awards for Women - www.zonta.org

4 Convocation Awards and Prizes

DELTA UPSILON MEMORIAL SCHOLARSHIP
Established by the McGill Chapter of the Delta Upsilon Fraternity in memory of its members who gave their lives in the Boer War, the Great War of 1914-18, and the Second War of 1939-45.
Eligibility: Open to students who have received an undergraduate degree from McGill University in any faculty and tenable for graduate study at any recognized university. The necessary CGPA is 3.7 or above.
Value: Average of $5,000 (awards of lesser value may be made in certain cases).

D.W. AMBRIDGE AWARD
This award was made possible by a gift to the late Douglas White Ambridge from the employees and shareholders on the occasion of his retirement from the presidency of Abitibi Power and Paper Company Limited on February 1,1963.
Eligibility: Awarded to a graduate receiving the degree of Ph.D. in the Physical Sciences or Engineering. The winner is selected from candidates nominated by each department whose academic record, including research and thesis, is judged to be outstanding among all those who graduate during the academic year.
Value: $1,000 plus an engraved plaque.
Deadline: March 31, for departmental nomination to the GPS Fellowships and Awards Section.

GORDON A. MACLACHLAN PRIZE
Established in 1990, with gifts from individuals and faculties, in recognition and appreciation of Professor Gordon A. MacLachlan's 10 years of service to McGill as Dean of the Faculty of Graduate Studies and Research and Vice-Principal (Research).
Eligibility: Awarded annually by GPS to the most outstanding graduate receiving a Ph.D. degree during the academic year in any discipline of the Biological Sciences or Health Sciences. The winner will be selected from candidates nominated by eligible departments, based on the quality of their academic records, the scholarly significance of their research and the excellence of their theses and other publications.
Value: $1,000.
Deadline: March 31, for departmental nomination to the GPS Fellowships and Awards Section.
GOVERNOR GENERAL’S GOLD MEDAL

Eligibility: Two medals are presented each year (normally at the Spring convocation) by McGill University, in the name of and on behalf of the Governor General of Canada, to the most outstanding graduating Master's or doctoral students (one in Human Sciences and one in Natural Sciences). A maximum of one nomination per McGill department will be accepted each year, based on truly outstanding academic merit. Nominations are reviewed by a GPS Selection Committee. Nominees for the Governor General's Gold Medal are automatically considered for all the internal Graduation Prizes and Awards listed in this section.

Value: Gold medal with an inscribed booklet.
Deadline: March 31, for departmental nomination to the GPS Fellowships and Awards Section.
Application: Nomination forms are available on the web in March. Nominations for the Governor General’s Gold medal are often combined with nominations for the Ambridge, Jenckes and Maclachlan prizes described elsewhere in this Calendar. Further details are available from the GPS Fellowships and Awards Section website.

JOHN WILLIAMSON FREDERICK PEACOCK MEMORIAL SCHOLARSHIP

Established in memory of Flight Lieutenant John Williamson Frederick Peacock, a member of the Delta Upsilon Fraternity, who was killed in action over Normandy in 1944.

Eligibility: Open to students who have received an undergraduate degree from McGill University in any faculty and tenable for graduate study at any recognized university. The necessary CGPA is 3.5 or above.

Value: Average of $5,000 (awards of lesser value may be made).

K.B. JENCKES PRIZE

Established in 1990 by an endowment from the estate of the late K.B. Jenckes.

Eligibility: Awarded annually by GPS to the most outstanding graduate receiving a Ph.D. degree during the academic year in any discipline in the social sciences and humanities. The winner will be chosen from among candidates nominated by eligible departments and faculties, assessed by the quality of their academic records, the scholarly significance of their research and the stylistic and substantive excellence of their theses and other publications.

Value: $900.
Deadline: March 31, for departmental nomination to the GPS Fellowships and Awards Section.

MCGILL ALUMNI ASSOCIATION GRADUATE AWARD


Eligibility: To be awarded by Graduate and Postdoctoral Studies to an outstanding graduate receiving the Governor General’s Gold Medal.

Value: $1,500.
Deadline: March 31, for departmental nomination to the GPS Fellowships and Awards Section.

ROBERT AND MARY STANFIELD DISSERTATION FELLOWSHIP

Established in 1994 through the Robert and Mary Stanfield Foundation.

Eligibility: This fellowship is awarded to an outstanding doctoral student whose research focuses on Canada or some aspects of Northern Studies nearing the completion of a Ph.D. degree.

Value: Minimum $9,000; non-renewable.

STANDARD LIFE DISSERTATION FELLOWSHIP

Established in 1997 by a generous donation by the Standard Life Insurance Company.

Eligibility: This fellowship is awarded to an outstanding doctoral student in Health Sciences who will complete their dissertation in the coming academic year and who is not receiving other fellowship funding.

Estimated value: $5,000.

5 Fellowships awarded by Departments and Faculties

The following pages list more than 200 fellowships, awards and bursaries, according to specific discipline, that are administered directly by departments or faculties at McGill University, or are externally funded. Unless otherwise indicated, students should contact the McGill department or faculty office concerned for additional information and application or nomination procedures.

5.1 Multidisciplinary

ALMA MATER FELLOWSHIP

Established in 1982 by generous contributions to the Alma Mater Fund from many graduates who designated their gifts to the area of scholarships and student aid.

Eligibility: Open to students in any degree program in the Graduate Studies. No citizenship restrictions.

Value: $10,000; renewable once.

ARTHUR AND DAWN WESTON FELLOWSHIP IN TEACHING AND LEARNING IN HIGHER EDUCATION

Established in 2007 by Arthur and Dawn Weston. It is awarded by GPS upon the recommendation of Teaching and Learning Services to an outstanding full-time graduate student interested in conducting research on university teaching and learning in any faculty.

Value: $20,000; renewable once at the Master's level, twice at the Doctoral level.
Deadline: March 9, 2010.
Application: Teaching and Learning Services
Suite MS-12, McLennan Library Building 3459 McTavish Street Montreal, Quebec, H3A 1Y1 Telephone: 514-398-6648 Fax: 514-398-8465 Email: tlt@mcmill.ca

ARTHUR C. TAGGE FELLOWSHIP IN THE HUMANITIES AND SOCIAL SCIENCES

Eligibility: Tenable by a graduate of any approved university proceeding to a higher degree in any department in the Humanities or the Social Sciences. No citizenship restrictions.

Value: $10,000; non-renewable. Awarded for one year only.

ARTS AND SCIENCE CLASS OF 1966 AWARD

Established by the Arts and Science Class of 1966 on the occasion of its 25th anniversary of graduation.

Eligibility: Open to graduate students in Arts or Science to pursue research at the Redpath or McCord Museum. Candidates are selected on the basis of academic merit by a committee named by the Deans of Arts and Science.

Value: $4,000 for one year only.
Application: There are no application procedures. Further information can be obtained from the Offices of the Dean of Arts and Dean of Science, from the Faculty of Arts website at www.mcgill.ca/arts, or from Josie D’Amico at 514-398-4215.

BEIJING MEMORIAL AWARD

Eligibility: Awarded on the basis of academic merit to a student working towards a higher degree at McGill University, with a preference to those from the People’s Republic of China.

Value: $1,000.

BMO FINANCIAL GROUP MAJOR FELLOWSHIPS

Established in 2007 by BMO Financial Group. Awarded by Graduate and Postdoctoral Studies to outstanding graduate students entering any Doctoral degree program, on the basis of academic merit.

Estimated value: $23,000 each; renewable twice.
**Eli ESTERINA AND GAETANO LIBERATORE FELLOWSHIP**

**Value:** 

**Eligibility:** Candidates must be Canadian citizens able to demonstrate financial need and registered as full time students in the third or fourth year of undergraduate studies or in a graduate program.

**Deadline:** April 30.

**Application:** Applications must be sent to the Scholarship Committee of the Society each year in order to be eligible for consideration for the award for the following academic year. The address is: Canadian Chinese Cultural Society of Montreal Inc., Suite 707, 1117 Ste. Catherine Street W., Montreal, Quebec, H3B 1H9. Each applicant should indicate his/her field of studies and plans for the future, as well as a need for financial assistance. The scholarship will be awarded at an official function of the Society during the month of September.

**CLIFFORD C.F. WONG FELLOWSHIP**

**Eligibility:** Founded in 1981 by Mr. Clifford C.F. Wong, B.Arch. 1960, to enable a graduate student to pursue studies towards a higher degree at McGill University. First preference will be given to students coming from the People’s Republic of China and second preference to students coming from Hong Kong. In the absence of suitable candidates from these two regions, the fellowship would be available to suitable candidates from any country.

**Value:** $12,000 plus tuition fees at the non-privatized rate; renewable once.

**DEBRA STEWART MEMORIAL FELLOWSHIP**

**Eligibility:** Offered to graduate students in the physical and biological sciences who demonstrate high ability and who are likely to enter a career of university teaching. No citizenship restrictions.

**Value:** $10,000; non-renewable.

**DELISE ALISON GRADUATE PRIZES**

**Established in 2006 by the late Lars Firing for outstanding graduate students in the area of Environmental Studies.**

**Value:** $15,000 each; renewable twice.

**J.W. MCCONNELL FOUNDATION FELLOWSHIPS IN ENVIRONMENT**

**Eligibility:** Open to students in any discipline who are citizens of the United States of America.

**Value:** $10,000; renewable once.

**J.W. MCCONNELL MEMORIAL FELLOWSHIP**

**Eligibility:** Open to graduate students in any discipline who are citizens of the United States of America.

**Value:** $10,000; renewable once.

**KENNETH DOWNES GRADUATE AWARD**

**Eligibility:** Awarded by GPS to an outstanding graduate student in the area of Environmental Studies. Awarded by Graduate and Postdoctoral Studies upon the recommendation of the faculties of Arts and Science.

**Value:** $10,000 each; renewable twice.

**LARS AND ALBERTA FIRING GRADUATE FELLOWSHIPS IN ENGINEERING**

**Eligibility:** Awarded by the Faculty of Engineering to students accepted into a graduate degree program, preferably at the Doctoral level, in the Faculty of Engineering. Preference will be given to students enrolled in the Department of Chemical Engineering, and also to students pursuing research in any of the following fields: Bioengineering, including Biomedical Engineering; Environmental Engineering; Sustainable Development in Natural Resources; Alternative/Sustainable/Renewable Energy; Transportation Engineering and Pharmaceutical Chemical Engineering. Funding may be combined with that received by applicants through agencies external to McGill or through internal McGill sources.

**Value:** $10,000; renewable twice.

**FRIENDS OF MCGILL FELLOWSHIP**

**Eligibility:** Open to graduate students in any discipline who are citizens of the United States of America.

**Value:** $10,000; renewable once.

**GREVILLE SMITH RESEARCH FELLOWSHIP**

**Eligibility:** Three fellowships are endowed by the trustees of the Greville Smith bequest for research by graduate students, one in Engineering, and one in Management, and one in any discipline, for overall excellence. The leadership qualities of the candidate, together with the usefulness to the community of the proposed study, is taken into consideration by GPS in their choice of fellows. No citizenship restrictions.

**Value:** $15,000; renewable twice.

**HAROLD H. HELM FELLOWSHIP**

**Established in 1960 in honour of Harold Helm, then Chairman of the Executive Committee of the Board of Trustees of Princeton University.**

**Eligibility:** Open to students in any degree program in graduate studies at McGill. No citizenship restrictions.

**Value:** $10,000; renewable once.

**HELLER FAMILY FELLOWSHIPS IN ARTS AND SCIENCE**

**Established by the J.W. McConnell Foundation to support outstanding doctoral students in the Faculty of Arts and the Faculty of Science. Awarded by Graduate and Postdoctoral Studies upon the recommendation of the faculties of Arts and Science.**

**Value:** $10,000 each; renewable twice.

**J.W. MCCONNELL FOUNDATION FELLOWSHIPS IN ENVIRONMENT**

**Established in 2000 by the J.W. McConnell Foundation to support graduate studies and research at McGill University, and so to strengthen, in quality and in numbers, the academic staff of Canadian universities and schools.**

**Eligibility:** The fellowships may be held by students registering in any graduate research program (except Medicine) at McGill.

**Value:** Varies.

**KENNETH DOWNES GRADUATE AWARD**

**Established in 1998 by Kenneth Downes (Class of 1947).**

**Eligibility:** Awarded by GPS to an outstanding graduate student.

**Value:** Minimum $5,000.
Established in 2007 by a generous graduate of the Faculty of Arts studies at McGill.

**Value:**
To be awarded to a research student in any faculty who

MARGARET GILLET Graduate Research Awards
Funded by both the McGill Women’s Alumnae Society and the McGill Centre for for Research and Teaching on Women (MCRTW), These awards are granted by the MCRTW in honour of Dr. Margaret Gillett, now retired, Macdonald Professor of Education at McGill University. Dr. Gillett initiated the Women’s Studies program at McGill and was founding director of MCRTW.

Eligibility: For graduate students in any McGill department for research in Women’s Studies leading to a degree.

Value: Maximum $1,000; including travel for research purposes.

Deadline: February 28.

Application: Application details and further information may be obtained from the MCRTW, McGill University, 3487 Peel Street, 2nd floor, Montreal, Quebec, H3A 1W7 or www.mcgill.ca/mcrtw.

MAX BELL FELLOWSHIP
Established in 2000 by the Max Bell Foundation of Calgary in memory of George Maxwell (Max) Bell (1912-1972), B.Com. 1932, Governor of McGill University from 1962-1971, businessman, ollman, newspaper publisher, sportsman and philanthropist. Awarded by Graduate and Postdoctoral Studies to outstanding entering graduate students studying in the areas of health and wellness, education, or environment.

Value: Minimum $20,000; renewable once at the Master’s level and twice at the Doctoral level.

MAX E. BINZ FELLOWSHIP
Established from the estate of the late Max E. Binz, who was born in Switzerland, emigrated to Canada in 1930, established a successful textile company, and became a generous benefactor of McGill University.

Eligibility: The fellowship is open to all students in degree programs in graduate studies. No citizenship restrictions.

Value: $15,000; renewable twice.

MAX STERN FELLOWSHIP IN HUMANITIES AND SOCIAL SCIENCES
Established through the generosity of the Dr. and Mrs. Max Stern Foundation.

Eligibility: The fellowship may be held by students registered in any graduate program in the humanities or social sciences at McGill. No citizenship restrictions.

Value: $15,000; renewable twice.

MAX STERN RECRUITMENT FELLOWSHIPS
Established in 1944 through a generous bequest from Dr. Max Stern, offered to students entering a graduate program at McGill University.

Eligibility: These fellowships are awarded to outstanding students seeking first admission to graduate studies in any of the selected departments at McGill University.

Value: $14,000 for one year consisting of a $10,000 award from the Max Stern Estate plus $4,000 from the award holder’s department.

MCGILL ALUMNAE SOCIETY FELLOWSHIP
Established in 1988 to commemorate the 100th anniversary of the founding of the McGill Alumnae Society.

Eligibility: To be awarded to a research student in any faculty who is pursuing studies of benefit or significance to women. Preference will be given to women applicants. No citizenship requirements.

Value: $10,000; renewable twice.

MCGILL INTERNATIONAL RESEARCH MASTER’S AWARDS
Established in 2007 by a generous graduate of the Faculty of Arts in order to encourage international students to pursue graduate studies at McGill.

Estimated value: $25,000; paid out over two years, provided the holder maintains satisfactory progress.

Application: Applicants must submit their application directly to departments along with their application for admission, by the deadline for financial aid applications.

NEIL CROLL MEMORIAL AWARD
Established in memory of the late Professor Neil Croll, Ph.D., M.D., Professor of Parasitology and Director of McGill International, and a teacher and friend of students from developing countries.

Eligibility: For graduate students, with a preference to those from developing countries.

Value: $1,000.

Application: No application necessary. Awarded by the Fellowship Committee of GPS to an outstanding student who has also been awarded a McGill Major Fellowship.

NORTHERN SCIENTIFIC TRAINING PROGRAM
Eligibility: The Northern Scientific Training Program administers grants to graduate and undergraduate students to help cover the field expenses of working in the North. Program funding is derived from the Department of Indian and Northern Affairs, Ottawa.

Estimated value: $3,000; awarded for one year only.

Deadline: End of October.

Application: Application forms can be obtained from www.ainc-inac.gc.ca/nth/st/nstp/index-eng.asp. Applications should be submitted to Northern Scientific Training Program, c/o Professor Laurie Chan, School of Dietetics and Human Nutrition, McGill University.

PHILIP F. VINEBERG GRADUATE FELLOWSHIP

Eligibility: Open to graduate students pursuing an advanced degree in Arts, Education, Law, Library Science, Music, Religious Studies or Social Work, to finance one year of study. Awarded to a graduate student who best exemplifies the qualities of intelligence as demonstrated by academic record and creative thinking; breadth of interest, perspective and tolerance as demonstrated by cross cultural interests; record of service to others; excellence as demonstrated by a record of disciplined undergraduate achievement at another university and the promise of more to come. The fellowship is open to all eligible students with preference to Canadian citizens and permanent residents.

Value: $10,000; non-renewable.

PHILIP P. BAILY FELLOWSHIP
Established in 1995 through a generous bequest by Philip Pendlebury Baily, B.Sc. 1913, M.Sc. 1914, for students registered in any graduate program in the Faculty of Medicine or Science. No citizenship restrictions.

Value: $12,000; non-renewable.

RICHARD H. TOMLINSON FELLOWSHIPS IN UNIVERSITY SCIENCE TEACHING
Established in 2003 by a generous gift from Dr. Richard H. Tomlinson, Ph.D. 1948. The awards are for outstanding graduate and postdoctoral students in the Faculty of Science and other faculties, who will be engaged in research in the teaching of science at the university level. Awarded by the Dean of Science on the basis of academic merit upon recommendation from the Director of the Tomlinson University Science Teaching Project.

Professors in the Faculty of Science and other faculties will nominate candidates to the Director of the Tomlinson University Science Teaching Project, who will forward recommendations to the Dean of Science.

Value: Minimum $17,500; renewable.

Application: For more detailed information, please send an email to: tomlinson.project@mcgill.ca with the words “University Science Teaching Fellowship” in the subject field.
SAUL HAYES GRADUATE FELLOWSHIP
Established by Edgar and Charles Bronfman in memory of Saul Hayes for graduate students undertaking research with preference to the areas of Civil Liberties and Human Rights. No citizenship restrictions.
Value: $10,000; tenable for up to four years.

SCHULICH GRADUATE FELLOWSHIPS
Established in 2008 with a generous gift from the Canadian Philanthropist Mr. Seymour Schulich.
Eligibility: Awarded by Graduate and Postdoctoral Studies based on academic merit to full-time graduate students in the following departments or schools: Departments of Agricultural Economics, Bioresource Engineering, Food Science and Agricultural Chemistry, Natural Resource Sciences and Plant Science, Departments of Mathematics and Statistics, Departments of Physics and School of Architecture and School of Urban Planning.
Value: Minimum $25,000.

SIR YUE-KONG PAO FELLOWSHIPS
Established in 2002 by Anna Pao Sohmen, M.S.W. 1969, in honour of her father, Sir Yue-Kong Pao. Awarded by GPS to outstanding graduate students on the basis of academic merit. Preference shall be given first to students from Ningbo University, and, secondarily, to students from the People's Republic of China.
Value: $25,000.
(Not offered until further notice.)

SOLVAY FELLOWSHIP
Eligibility: Offered for the first year of graduate study in any department at McGill. The holder must have graduated in any undergraduate faculty of McGill in the session prior to that for which the award is given, and must obtain permission to proceed to graduate study. No citizenship restrictions.
Value: $10,000; non-renewable.

TOMLINSON DOCTORAL FELLOWSHIPS
Established in 2000 through a very generous gift from Dr. Richard H. Tomlinson, Ph.D. 1948. Awarded annually by Graduate and Postdoctoral Studies to recruit outstanding students into Master's and Doctoral degree programs. Tomlinson fellows who accept a fellowship from an agency external to McGill will be entitled to one-half the full value of the Tomlinson Fellowship.
Eligibility: The Tomlinson Doctoral Fellowships are for new students accepted into a doctoral degree at any department at McGill University.
Value: $25,000; renewable annually based on satisfactory progress, to a maximum tenure of 3 years for Doctoral level.

WALTER HITSCHFELD AWARD
Established in honour of W.F. Hitschfeld Ph.D., F.R.S., F.R.S.C., a teacher and friend of many such students and former Director of McGill International.
Eligibility: For graduate students, with a preference to those from developing countries.
Value: $1,000.

5.1.1 McGill Institute for the Study of Canada

CHARLES R. BRONFMAN & ALEX K. PATERSON TOP-UP AWARDS
Established in 2008 in honor of Charles R. Bronfman and Alex K. Paterson, co-chairs of the MISC Board of Trustees from 1994 to 2008.
Eligibility: These fellowships are awarded to students in a doctoral program in the Faculty of Arts whose research focuses on some aspect of Canada.
Value: $5,000; renewable.

H. ANTHONY HAMPSON AWARD IN THE MCGILL INSTITUTE FOR THE STUDY OF CANADA
Established by family and friends in memory of H. Anthony Hampson, B.A. 1951, who was a leader of McGill capital campaigns and the first President of the Canadian Development Corporation.
Eligibility: Awarded by the McGill Institute for the Study of Canada to two final year Ph.D. students whose research focuses on some aspect of Canadian Studies and who are actively engaged in writing their thesis.
Estimated value: $3,000.

JOSEPH AND SANDRA ROTMAN PRIZE FOR STUDENT EXCELLENCE IN PUBLIC POLICY INNOVATION
Established in 2003 by Heather Monroe-Blum, Leonard Solomon Blum and by McGill University, in honour of Joseph and Sandra Rotman.
Eligibility: Awarded by the McGill Institute for the Study of Canada to a graduate student in the Faculty of Arts whose Master's or Doctoral thesis is judged to have made a distinctive contribution to the understanding or conduct of public policy in Canada.
Value: Minimum $500.

WARREN FELLOWSHIP IN THE MCGILL INSTITUTE FOR THE STUDY OF CANADA
Eligibility: Awarded by the McGill Institute for the Study of Canada to a deserving aboriginal graduate student whose research relates to Canada.
Value: $21,000; renewable.

For current competition deadline and application information please consult www.mcgill.ca/misc/fellowships-awards.

5.2 Agricultural and Environmental Sciences

AMY WONG FELLOWSHIP
梁家康醫生夫婦研究生獎學金
Established in 1998 by a generous gift from a McGill graduate of Chemical Engineering (Class of 1959) from Hong Kong.
Eligibility: Awarded to a qualified student from China, including Hong Kong, who is an entering postdoctoral fellow, Ph.D. or M.Sc. student conducting agricultural production/food related research in the Faculty of Agricultural and Environmental Sciences. Awarded by the Dean of the Faculty in consultation with the departments. The recipients are expected to return to their home country after the completion of their studies.
Estimated value: $20,000; renewable once at the Master's level and twice at the Doctoral or Postdoctoral levels.

BLAIR POSTGRADUATE FELLOWSHIPS
Eligibility: Established through a bequest to the Faculty of Agricultural and Environmental Sciences from the Blair Farm estate, Chateauguay Valley. Awarded annually to a doctoral candidate whose research has a clear relationship to problems of Quebec farms, with preference for marginal farms in south-western Quebec. M.Sc. students in Agricultural Economics are eligible.
Value: $5,000; renewable for up to three years.
Application: By departmental recommendation to the Faculty of Agricultural and Environmental Sciences Scholarships Committee. Candidates will be requested to provide a one-page statement explaining how their project relates to the fellowship.

CATHERINE FREEMAN FELLOWSHIP IN HUMAN NUTRITION
Established in 2002 by Catherine Freeman, B.H.S. 1941, for an outstanding graduate student in the School of Dietetics and Human Nutrition.
Eligibility: Awarded by the Faculty of Agricultural and Environmental Sciences Scholarships Committee on the recommendation of the School.
Award: Minimum $10,000.
DONALD MACKENZIE MUNROE FELLOWSHIP
Established in 2006 by Principal Heather Munroe-Blum, O.C., Ph.D., F.R.S.C., on behalf of herself and her brothers: Robert, Ross, Donald, John and James, in memory of their father, Donald Mackenzie Munroe. Awarded by Graduate and Postdoctoral Studies to an outstanding graduate student in the Faculty of Agricultural and Environmental Sciences upon joint recommendation of the Faculty of Agricultural and Environmental Sciences and the McGill School of Environment.
Value: $20,000; renewable once at the Master's Level and twice at the Doctoral level.

ELIZABETH AND ANDRE ROSSINGER FELLOWSHIP IN CANADIAN RURAL SUSTAINABILITY
Established in 2001 through a bequest from Marian Howard Sketch, in memory of her husband, the late Ralph M. Sketch, B.S.A. 1931, to encourage and support a student from China studying in a program offered on the Macdonald Campus. Awarded by Graduate and Postdoctoral Studies on the recommendation of the Faculty of Agricultural and Environmental Sciences.
Value: Minimum $10,000 plus a mandatory contribution from the supervisor's research fund to provide a minimum annual income equivalent to an NSERC Post Graduate Scholarship (PBS); renewable once at a Master's level, twice at a Doctoral level.

HUGH BAILY AWARD
Established through a legacy by Philip Pendlebury Baily, B.Sc. 1913, M.Sc. 1914, in memory of his brother, Hugh Reginald Dowson Baily, Agriculture 1916, the first member of the University to give his life in the war of 1914-18.
Eligibility: Awarded to a graduate student in an agriculture-related field through the Faculty of Agricultural and Environmental Sciences. Preference will be given to students completing their dissertation who require less than one year of support.
Value: $750.
Application: By departmental recommendation to the Faculty of Agricultural and Environmental Sciences Scholars.

MACDONALD CLASS OF '44 ROWLES GRADUATE BURSARY
Established by the Class of '44 in honour of William and Laura Rowles to recognize with respect the affectation and friendship, which the Rowles have shared with Macdonald students and graduates through the years.
Eligibility: Awarded to Macdonald graduate students who are in good academic standing and have demonstrated financial need. Preference will be given to Canadian students.
Value: $750.
Application: By departmental recommendation to the Faculty of Agricultural and Environmental Sciences Scholarships Committee.

MARIAN AND RALPH SKETCH FELLOWSHIP
Established in 2004 by a bequest from Marian Howard Sketch, in memory of her husband, the late Ralph M. Sketch, B.S.A. 1931, to encourage and support a student from China using in a program offered on the Macdonald Campus. Awarded by the Scholarships Committee, Faculty of Agricultural and Environmental Sciences; tenable for two years at the M.Sc. Level or three years at the Ph.D. level.
Value: $10,000 plus a mandatory contribution from the supervisor's research fund to provide a minimum annual income of $15,000.

“OLD SUN” ENTRANCE AWARD
Established in 1994 and increased with an additional contribution in 2006 in celebration of Macdonald's 100th anniversary by Joy Harvie Maclaren, B.Sc.(Nutr.) 1944, LL.D. 2000, in recognition of her 50th anniversary of graduation from Macdonald College and in honour of her late father, Eric Harvie. Colonel Harvie was given the honorary name of “Old Sun” in recognition of his efforts in promoting the mandates of Treaty No. 7 which was signed in 1874 by Blackfoot Chief Old Sun and Crowfoot in agreement with the Queen and Canadian government for land, peace and education. Joy Maclaren has passionately continued the work of her late father and has supported numerous health, education and social initiatives across Canada in aid of Canada's Inuit and Aboriginal peoples. Her involvement has also encouraged greater communication and the sharing of wisdom amongst all people. In recognition of her work and commitment towards Canada's First People, the Blackfoot, the Mohawk and the Ojibway bestowed upon Joy Maclaren the honorary name "New Sun".
Eligibility: Preference will be given to Canadian Aboriginal and Inuit students, studying nutrition, dietetics, agriculture or environmental sciences on the Macdonald Campus. Community involvement and/or leadership through extracurricular activities is encouraged.
Value: $10,000. May be renewed for a maximum of two years subject to satisfactory standing and full-time status.
Application: Awarded by the Faculty of Agricultural and Environmental Sciences Scholarships Committee, after department invitation of candidates to apply.

ROTY CLUB OF MONTREAL INTERNATIONAL AGRICULTURAL AWARD
Established by the Rotary Club of Montreal in 1997 to provide opportunity for international students in agriculture to study at McGill.
Eligibility: Awarded to an international student for graduate level studies at the Macdonald Campus in the area of agriculture and food production. Preference will be given to entering students from Asia, Africa or the Caribbean, who require additional financial assistance and who intend to return to their home country to train others.
Value: $5,000; renewable for one year in the M.Sc. program and two years in the Ph.D. program.
Application: By departmental recommendation to the Faculty of Agricultural and Environmental Sciences Scholarships Committee.

WALTER M. STEWART POSTGRADUATE SCHOLARSHIP IN AGRICULTURE
Established by the late Walter M. Stewart.
Eligibility: Awarded annually to students studying at the postgraduate level at Macdonald Campus. Preference will be given to graduates of Quebec universities. If there are insufficient suitable candidates at the postgraduate level in a particular year, funds will be awarded to undergraduate students in the Faculty of Agricultural and Environmental Sciences who have achieved high academic standing.
Application: By departmental recommendation to the Faculty of Agricultural and Environmental Sciences Scholarships Committee.
Value: Five awards of $5,000 each, totalling $25,000.

5.2.1 Agricultural Economics

LEWIS A. FISCHER MEMORIAL BURSARY IN AGRICULTURAL ECONOMICS
Established through donations in recognition of Dr. Fischer's contributions to the Department of Agricultural Economics from 1959 to 1989.
Eligibility: Awarded to a graduate student in Agricultural Economics, based on academic achievement and financial need. Preference will be given to an international student.
Value: $1,000.
Deadline: April 1.
Application: Please indicate your interest in this award on the electronic application form. For more information, contact the Program Director for Agricultural Economics: agr.econ@mcgill.ca.
**5.2.2 Animal Science**

**AJINOMOTO HEARTLAND/HALCHEMIX SCHOLARSHIP**
Awarded to a graduate student in animal and poultry science who is conducting research in the field of amino acids in the nutrition of monogastric livestock. Preference will be given to a Ph.D. candidate.

**Eligibility:** Awarded by the Faculty of Agricultural and Environmental Sciences Scholarships Committee on the recommendation of the Department of Animal Science.

**Value:** $500.

**5.2.3 Natural Resource Sciences**

**E. MELVILLE DUPORTE AWARD**
Established by an endowment to honour the late E. Melville DuPorte, B.S.A., S.Sc., Ph.D., and D.Sc., long-time Professor of Entomology at Macdonald College and a respected leader and researcher.

**Eligibility:** Awarded to a student demonstrating excellence in the first year of graduate studies in Entomology in the Department of Natural Resource Sciences.

**Value:** $500.

**Application:** By departmental recommendation to the Faculty of Agricultural and Environmental Sciences Scholarships Committee.

**MARGARET DUPORTE FELLOWSHIPS**
Established by a bequest of the late Margaret DuPorte, B.Sc.(Agr.) 1936.

**Eligibility:** Awarded to students in the M.Sc. or Ph.D. programs in the Department of Natural Resource Sciences for graduate studies in Entomology.

**Value:** Two awards of $8,000 each.

**Application:** By departmental recommendation to the Faculty of Agricultural and Environmental Sciences Scholarships Committee.

**TOMLINSON CENTENNIAL FELLOWSHIP IN FOREST ECOLOGY**
Established in 2006 by Dr. Richard Tomlinson in honour of Macdonald Campus’ hundreth anniversary and the long career in forest research of his brother, Dr. George Tomlinson. Awarded to an outstanding graduate student working in the area of forest ecology in the Department of Natural Resource Sciences. Awarded on the basis of academic merit by Graduate and Postdoctoral Studies on the recommendation of the Scholarships Committee of the Faculty of Agricultural and Environmental Sciences.

**Value:** Varies.

**5.2.4 Parasitology**

**AMY WONG BIOTECHNOLOGY AWARD**
Established in 1998 by a generous gift from a McGill graduate of Chemical Engineering (Class of 1959) from Hong Kong.

**Eligibility:** Awarded by the Institute of Parasitology to a qualified student from China, including Hong Kong, who is an outstanding student entering the Biotechnology Graduate Certificate Program or M.Sc.(A) in Biotechnology, renewable once at the Master's level. Preference will be given to students entering at the certificate level. The recipients are expected to return to their home country after the completion of their studies.

**Estimated value:** $9,500.

**LYNDE LAIRD LYSTER MEMORIAL FELLOWSHIP IN PARASITOLOGY**
Established in 1972 by a bequest from the estate of Arthur J. Lyster in memory of his son.

**Eligibility:** Awarded by the fellowships committee of the Institute of Parasitology to new applicants for graduate studies in Parasitology who are nominated by the academic staff of the Institute. The fellowship will be awarded on the basis of strong academic standing. With other considerations being equal, preference will be given to candidates from (a) the Eastern Townships; (b) the Province of Quebec; (c) Canada; and (d) outside of Canada, in that order.

**Value:** $10,000 plus a mandatory contribution from other sources to provide a minimum annual income of $14,000.

**ROBERT P. HARPUR FELLOWSHIP IN PARASITOLOGY**
Established in 2005 by bequest from Robert P. Harpur, M.Sc. 1947, Ph.D. 1949, a former faculty member at the Institute of Parasitology. Awarded by Graduate and Postdoctoral Studies, upon recommendation from the fellowships committee of the Institute of Parasitology in the Faculty of Agricultural and Environmental Sciences, to a newly admitted international student for graduate studies in Parasitology. The Fellowship will be awarded on the basis of academic excellence and research potential.

**Value:** Minimum $11,000 plus a mandatory contribution from other sources to provide a minimum annual income of $16,000. Renewable once at the Master's level and twice at the Doctoral level. M.Sc. students who transfer to a Ph.D. program in Parasitology may renew the award twice. In all cases, the award cannot be held for more than three years.

**5.2.5 Plant Science**

**CASPER W. OWEN FELLOWSHIP**
Eligibility: Graduate students, both M.Sc. and Ph.D. level, enrolled or planning to enrol in Plant Science are eligible for this award but preference will be given to entering students. Applicants should have outstanding academic records or equivalent research experience.

**Value:** $10,000 (two instalments); renewable once. The department will ensure that the holder of the fellowship has an academic income of at least $16,000.

**Application:** Apply to the Department of Plant Science. Entering graduate students should submit their fellowship application with application for graduate studies.

**FREDERICK DIMMOCK MEMORIAL FELLOWSHIP**
Established in 1888 by an endowment in memory of the late Frederick Dimmock, a graduate of Macdonald College (1923).

**Eligibility:** Awarded annually by the Plant Science Department to a postgraduate student pursuing an aspect of research on grain crops.

**Estimated value:** $4,000.

**Application:** By departmental recommendation to the Faculty of Agricultural and Environmental Sciences Scholarships Committee.

**PLANT SCIENCE POSTGRADUATE AWARD**
This memorial award was established by the family and friends of the late Robert Klinck, a former student.

**Eligibility:** Awarded to a student who has successfully completed at least one year of post-graduate studies in the Department of Plant Science and who has demonstrated good citizenship in the Department.

**Estimated value:** $1,200.

**Application:** By departmental recommendation to the Faculty of Agricultural and Environmental Sciences Scholarships Committee.
5.3 Arts

ABNER KINGMAN FELLOWSHIPS IN ARTS
Established in 2008 in memory of Abner Kingman, B.A. 1908, to commemorate the 100th anniversary of his convocation. Awarded by Graduate and Postdoctoral Studies to full-time students in a doctoral degree program in Art History, Canadian Studies, Economics, English, History, Philosophy or Political Science. Awarded on the basis of academic merit on the recommendation of the Faculty of Arts. Whenever possible, the Fellowships will be awarded to at least one international student each year. Estimated value: $20,000; renewable once.

ALLEN OLIVER FELLOWSHIPS IN ECONOMICS AND POLITICAL SCIENCE
Established by Mrs. Frank Oliver, of Edmonton, Alberta, in proud and loving memory of her son, the late Allen Oliver, M.C., B.A. Lieutenant, 26th Battery, C.F.A., who was killed in action at the Somme on November 18, 1916. Lieutenant Oliver was an honours graduate in 1915 in the Department of Economics and Political Science. Eligibility: Awarded to the student who stands highest in first class honours in the Departments of Economics and Political Science at the final B.A. examination. The holder is required to pursue studies in Economics and Political Science at McGill or elsewhere. Value: Two awards of $2,500 (one in political science; one in economics). Application: Awarded by Faculty of Arts on the recommendation of the departments of Economics and Political Science.

GORDON J.A. WHITEHORNE RECRUITMENT FELLOWSHIP
Established in 2001 by the estate of Gordon James Alexander Whitehorne, B.A. 1938, for an outstanding student entering a doctoral program in the Faculty of Arts. Awarded on the basis of academic excellence by the Faculty of Arts. Value: $5,000.

EAST & SOUTHEAST ASIAN ARCHEOLOGY AND EARLY HISTORY FELLOWSHIP
Established in 2008 by the Henry T. Luce Foundation for Ph.D. students in the area of East and Southeast Asian Archeology and Early History. Administered by GPS upon recommendation of the Departments of East Asian Studies and Anthropology. Value: $18,000; renewable twice.

MAX STERN MCCORD MUSEUM FELLOWSHIP
Established in 1991 by the trustees of the Max Stern estate. Eligibility: Offered to mentiorious graduate students in the Faculty of Arts at McGill University whose research will directly involve the collections of the McCord Museum. Please consult the McCord Museum website at www.mccord-museum.qc.ca for information on the various collections of the Museum. No citizenship restrictions. Value: Master’s $15,000; Doctoral $20,000.

MCCALL MACBAIN FELLOWS
Established in 2007 through a generous gift from John MacBain, B.A. 1980 and Marcy MacBain. Awarded by Graduate and Postdoctoral Studies on the recommendation of the Faculty of Arts to outstanding graduate students in any graduate degree program in the Faculty. Value: $15,000 per year.

MCCALL MACBAIN FELLOWSHIPS IN ARTS
Established in 2007 through a generous gift from John MacBain, B.A. 1980 and Marcy MacBain. Awarded by Graduate and Postdoctoral Studies on the recommendation of the Faculty of Arts to outstanding graduate students in any graduate degree program in the Faculty. Estimated value: Amounts vary depending on the funding situation of the candidate.

MR. AND MRS. JOHNSON NG WAI YEE FELLOWSHIP
Eligibility: Established in 2003 by the Ng Family Trust in honour of Mr. and Mrs. Johnson Ng Wai Yee for an outstanding student from a developing country. Awarded by the Faculty of Arts Fellowships Committee on the basis of academic merit to a student, subject to international fees and from a developing country, who is entering the first year of a Master’s or Ph.D. program in the social sciences in the Faculty of Arts. Value: Minimum $10,000; renewable.

NATHAN BRECHER FELLOWSHIP IN ECONOMICS AND POLITICAL SCIENCE
Founded by a bequest of the late Nathan Brecher for the purpose of enabling a student of academic distinction in Economics or Political Science to pursue studies towards a graduate degree at McGill University. Value: Up to $3,500. Application: Awarded by GPS on the recommendation of the Departments of Economics and Political Science.

SAUL AND FREDA FRANKEL PRIZE
Established in 2000 by Professor Saul Frankel (B.A., M.A., Ph.D. McGill), McGill professor in the Departments of Economics and Political Science from 1952 to 1969. Awarded to a graduating Honours or first-year M.A. student for an outstanding research paper on a topic in the "history of ideas". Awarded by the Faculty of Arts Scholarships Committee upon recommendation from an adjudicating committee. Value: $1,000.

5.3.1 Anthropology

BRUCE AND BARBARA TRIGGER GRADUATE PRIZE IN ARCHAEOLOGY
Established in 2007 in memory of Professor Bruce G. Trigger, McGill archaeologist, and his wife Dr. Barbara M. Welch (Trigger), geographer. Eligibility: Awarded by the Department of Anthropology to one or more outstanding students in any graduate degree program who are pursuing archaeological fieldwork. Value: Up to two awards, minimum $2,000 each.

RICHARD F. SALISBURY PRIZE IN ANTHROPOLOGY
5.3.2 Art History and Communication Studies

BRAM GARBER FELLOWSHIP IN ART HISTORY
Established in 1988 in honour of Bram Garber, this tribute to a well-known and respected member of the Canadian business community was provided by the generous gifts of family and friends.
Eligibility: Students pursuing graduate studies in Art History at McGill, Faculty of Arts are eligible.
Value: $4,000
Application: Awarded by Graduate and Postdoctoral Studies upon the recommendation of the Department of Art History and Communication Studies.

JEAN DE GRANDPRÉ PRIZE
Established by the Chancellor of McGill University, Jean de Grandpré, the Chrysler Corporation and Bell Canada.
Eligibility: Awarded by the Department of Art History and Communication Studies to a graduate student in Communications who has done outstanding work in the field.
Value: $500.

MCGILL - CANADIAN CENTRE FOR ARCHITECTURE COLLECTION RESEARCH GRANTS PROGRAM
Established in 2006 through a partnership with the Department of Art History and Communication Studies and the Canadian Centre for Architecture, we can offer up to four one-month fellowships to cover research in the CCA’s extensive holdings. To learn more about their holdings, visit their website at http://cca.qc.ca.
Eligibility: Doctoral students in Art History or Communication Studies who have passed their comprehensive exams (Art History) or passed their prospectus (Communication Studies).
Stipend: $2,000 per month for up to four months.
Residency: Fellows will be expected to work full-time on their research at the CCA during the period of their fellowship. The CCA will provide the student with access to their collections and staff, and space to conduct their work. Each year the department will offer up to a total of $8,000 in grant money.

5.3.3 East Asian Studies

CANADIAN CHINESE CULTURAL SOCIETY OF MONTREAL INC. SCHOLARSHIP
Eligibility: Founded in 1969, the Canadian Chinese Cultural Society of Montreal Inc. offers an annual scholarship to an undergraduate or graduate student majoring in Chinese Studies. Candidates must be Canadian citizens able to demonstrate financial need and registered as full time students in the third or fourth year of undergraduate studies or in a graduate program.
Value: $1,000.
Deadline: April 30.
Application: Applications must be sent to the Scholarship Committee of the Society each year in order to be eligible for consideration for the award for the following academic year. The address is: Canadian Chinese Cultural Society of Montreal Inc., Suite 707, 1117 Ste. Catherine Street W., Montreal, Quebec, H3B 1H9. Each applicant should indicate his/her field of studies and plans for the future, as well as a need for financial assistance. The scholarship will be awarded at an official function of the Society during the month of September.

HENRY T. LUCE FOUNDATION FELLOWSHIPS
Established in 2008 by the Henry T. Luce Foundation for Ph.D. students in the area of East and Southeast Asian Archeology and Early History. Administered by GPS upon recommendation of the Departments of East Asian Studies and Anthropology.
Value: $16,000; renewable twice.

PAUL HSIANG GRADUATE FELLOWSHIP IN CHINESE POETRY AND LITERATURE
Eligibility: Established by the endowment of the late Professor Paul Hsiang to support scholarly research in traditional Chinese poetry, poetics and literature. Awarded by Graduate and Postdoctoral Studies upon the recommendation of the Department of East Asian Studies, on the basis of academic merit.
Estimated value: $14,000; renewable once at the Master’s level and twice at the Doctoral level.

PROFESSOR PAUL T.K. LIN FELLOWSHIP
Eligibility: Established in 2003 by an anonymous gift in honour of Professor Paul T.K. Lin, the first Director of the Centre for East Asian Studies at McGill. Awarded by the Faculty of Arts on the recommendation of the Department of East Asian Studies to a student entering the Department's Master's or Ph.D. program. Preference shall be given to students from the People's Republic of China.
Value: Estimated $5,000; renewable.

5.3.4 Economics

MIRIAM AND PHILIP VINEBERG GRADUATE FELLOWSHIP IN ECONOMICS
Eligibility: Established by Philip Vineberg for the purpose of enabling a student of academic distinction to pursue studies towards a graduate degree in Economics at McGill University.
Value: $1,200; renewable for a second year subject to high academic performance.
Application: Awarded by the Department of Economics.

5.3.5 English and Comparative Literature

HUGH MACLENNAN FELLOWSHIP FOR THE STUDY OF ENGLISH
Established in 1993 from the estate of Hugh MacLennan.
Eligibility: Awarded by GPS upon the recommendation of the Department of English.
Value: Varies.

MARY KEENAN SCHOLARSHIP IN ENGLISH
Eligibility: Awarded by the Department of English to a student proceeding at McGill from the B.A. to the M.A. in English.
Value: $500.

SLAVA KLIMA PRIZE FOR EXCELLENCE IN ENGLISH LITERARY STUDIES
Established in 2002 by a bequest from Slava Klima, former professor of English Literature.
Eligibility: Awarded by the Department of English to an outstanding doctoral student in literature.
Value: Minimum $1,250.

5.3.6 German Studies

DEUTSCHE GESELLSCHAFT ZU MONTREAL SCHOLARSHIP
Eligibility: Canadian citizen or permanent resident pursuing graduate studies in German language and literature, including German Canadian studies.
Value: $2,000.
Application: Awarded by the Department of German Studies.

HANS AND EUGENIA JÜTTING FELLOWSHIP
Established in 2000 by Hans Jütting and Eugenia Jütting, friends of McGill University.
Eligibility: Awarded to a meritorious student in German Studies.
Value: Two awards of $4,000 each.
Application: Awarded by the Department of German Studies.
5.3.7 History

DAISY A. LATIMER MEMORIAL PRIZE IN HISTORY
Established in 1987 in memory of Daisy Latimer, B.A. 1971, by her devoted friend and former husband, Michael P. Paidoussis, and a few of her closest friends.
Eligibility: Awarded by the Department of History to the student completing the best M.A. thesis in History, preferably in European or Latin American History, proceeding to doctoral studies at McGill or at another distinguished university. A fine literary style in the thesis is a necessary co-requisite for this award.
Value: $1,500.

LOUISE DECHÊNE PRIZE IN CANADIAN HISTORY
Established in 2006 in honour of Louise Dechêne, an outstanding scholar whose work changed the landscape of early Canadian history and inspired several generations of historians. Louise Dechêne directed graduate students in early Canadian fields ranging from economic history to native history.
Eligibility: Awarded by the Department of History to an M.A. or Ph.D. student whose research is in the area of early Canadian history.
Value: Minimum $500.

MCNAUGHTON FELLOWSHIPS IN CLASSICS
Eligibility: Awarded annually, on the basis of merit, promise and need, to students in their first year of the M.A. or Ph.D. program in Classics. These awards may be renewed for a second year at the discretion of the Department of History.
Value: Two awards, $2,000 each.
Deadline: None.
Application: None; on the basis of the candidate's application for graduate studies.

PAUL F. MCCULLAGH AWARD
Established by Emeritus Professor Paul F. McCullagh, who taught Classics at McGill from 1926-1988, for a student pursuing graduate work in the study of Latin language and literature or Ancient Greek language and literature. Awarded by GPS on the recommendation of the Program Committee in Classical Studies, Department of History.
Value: $4,000.

PETER CUNDILL FELLOWSHIPS IN HISTORY
Established in 2007 by Peter Cundill, B.Com. 1960, for outstanding graduate students entering a doctoral program in the Department of History, Faculty of Arts. Awarded by Graduate and Postdoctoral Studies on the recommendation of the Faculty of Arts.
Estimated value: $25,000; renewable twice.

ROBERT VOGEL MEMORIAL AWARD IN HISTORY
Established in memory of Robert Vogel, an inspiring teacher, historian, former Chair of the Department of History and former Dean of the Faculty of Arts.
Eligibility: Awarded by the Department of History to the most promising student entering either the M.A. or Ph.D. program, whose focus of research is European history, broadly defined.
Value: Minimum $1,000.

THE FOUNDATION FOR THE ADVANCEMENT OF PROTESTANT EDUCATION GRADUATE FELLOWSHIP IN HISTORY
Established in 2002 by The Foundation for the Advancement of Protestant Education for an outstanding graduate student in the Department of History.
Eligibility: Awarded by the Department of History to graduate students in History on the basis of academic excellence and outstanding research potential. Preference shall be given to students researching the history of Protestant education in the province of Quebec.
Value: Minimum $7,500.

T. PALMER HOWARD, QC AWARD IN CANADIAN HISTORY
Established in 1990 by the Pan-Canada Foundation to honour T. Palmer Howard, QC, B.A. 1931, B.C.L. 1934, in recognition of his interest in the research and writing of Canadian history.
Eligibility: Awarded by the History Department to a leading candidate entering the M.A. or Ph.D. program in Canadian history at McGill.
Value: $2,000.

5.3.8 Islamic Studies

CEDRIK GODDARD MEMORIAL AWARD IN ISLAMIC STUDIES
Established in 2001 by Thomas Albert and Ragnhild Tischler Goddard, relatives, and friends in memory of Cedrik Christopher Goddard, M.A. 1999. Awarded by the Institute of Islamic Studies in recognition for creativity and academic merit to a graduate student in Islamic Studies.
Value: Minimum $500.

INGRID SEMAAN PRIZE
Established by Professor Khalil I. Semaan in honour of his daughter, a McGill/SUNY student and a class of 1990 graduate in Sociology.
Eligibility: Awarded by the Institute of Islamic Studies to the student with the most outstanding thesis, essay or term paper that explores the contribution of women to Arabic culture.
Value: $100.

J. JEFFERY SEMAAN PRIZE
Established in 1989 by Dr. Khalil I. Semaan in honour of his son, a McGill graduate in medicine.
Eligibility: Awarded to the student demonstrating the greatest accomplishment in first or second-year Arabic. Open to both graduate and undergraduate students.
Value: $100.

5.3.9 Italian Studies

ANNE DUDLEY NOAD AWARD
Established in 1983 in memory of Anne Dudley Noad, a long-time teacher of evening courses in Italian.
Eligibility: On the basis of academic standing, awarded by the Department of Italian Studies to a student entering a graduate program in Italian.
Value: $300.

ANTONIO D’ANDREA MEMORIAL FUND
Established in 1999 in memory of Professor Antonio D’Andrea, Professor Emeritus, Department of Italian Studies.
Eligibility: Awarded by the Department of Italian Studies to provide financial support to graduate students of the Department to attend scholarly conferences.
Value: $500.

5.3.10 Jewish Studies

MORTON AND BERNICE BROWNSTEIN FELLOWSHIP IN JEWISH STUDIES
Established in 1999 by Morton and Bernice Brownstein, this fellowship will be awarded by the Department of Jewish Studies to a graduate student or a postdoctoral candidate in the Department of Jewish Studies.
Value: $10,000.
5.3.11 Langue et littérature françaises

BOURSE D'EXCELLENCE EN LANGUE ET LITTÉRATURE FRANÇAISES GENEVIEVE DE LA TOUR FONDUE
Crée en 2001 par la succession de Geneviève de La Tour Fondue à l’intention d’un étudiant de maîtrise ou de doctorat du Département de langue et littérature françaises. Décernée par le Département de langue et littérature françaises en reconnaissance de l’excellence du dossier universitaire.
Value: Minimum $8,000.

ISABEL BILLINGSLEY PRIZE IN FRENCH STUDIES
Établi par Andrew Billingsley, B.Sc. 1960, en mémoire de sa mère, Isabel Billingsley (née Rowat), B.A. 1930, qui, pendant son séjour à McGill, a été présidente de la classe du Royal Victoria College de 1929 à 1930 et a reçu une bourse de l’Alliance française qui lui a permis d’aller étudier à la Sorbonne la même année.
Admissibilité: Remis chaque année par le Département de langue et littérature françaises pour le meilleur mémoire de maîtrise.
Value: Minimum $1,000.

5.3.12 Linguistics

CREMONA MEMORIAL FELLOWSHIP IN LINGUISTICS
Eligibility: Awarded by the Department of Linguistics to an outstanding graduate student registered in the Ph.D. or M.A. program in Linguistics.
Value: Minimum $6,000.

LARA RIENTE MEMORIAL PRIZE IN LINGUISTICS
Established in 2002 by family, friends, fellow students, professors and the Jewish Rehabilitation Hospital Foundation in memory of Lara Riente, B.A. 1992, M.A. 2001. Lara was a gifted graduate of the Department of Linguistics whose sudden and tragic death was mourned by all who knew her.
Eligibility: Awarded by the Faculty of Arts Scholarships committee on the recommendation of the Department of Linguistics on the basis of high academic standing to a graduate or an undergraduate student enrolled in a full-time degree program in Linguistics. Preference shall be given to students in Neurolinguistics and/or Morphology.
Value: Minimum $500.

5.3.13 McGill Centre for Research and Teaching on Women

SHREE MULAY GRADUATE AWARD IN GENDER AND WOMEN’S STUDIES
Established in 2007 through the generous donations of friends of the McGill Centre for Research and Teaching on Women (MCRTW) to recognize Dr. Mulay’s 11 years of dedicated service as Director of the Centre. Awarded by the MCRTW on recommendation of the Women’s Studies Committee to a graduate student who is enrolling in the Graduate Option in Gender and Women’s Studies and exemplifies excellence in scholarship in gender and/or women’s studies.
Estimated value: $5,000.
Deadline: March 1.

5.3.14 Philosophy

DAVID FATE NORTON AND MARY J. NORTON FELLOWSHIP IN PHILOSOPHY
Eligibility: Established in 2001 by David Fate Norton and Mary J. Norton to assist a graduate student working full-time on a Ph.D. thesis in Philosophy. Awarded on the basis of academic merit by the Department of Philosophy in the Faculty of Arts. Preference will be given to a student who will complete her or his dissertation in the coming academic year. Recipients must agree not to accept paid or unpaid employment (including any form of teaching, tutoring, grading of papers or research for another party) during tenure of the Fellowship.
Value: Minimum $5,000 for one term; re-application is permitted.

DOW-HICKSON FELLOWSHIP IN THEORETICAL PHILOSOPHY
Endowed by the late Professor J.W.A. Hickson.
Eligibility: Tenable by a graduate of any approved university proceeding to a higher degree in Theoretical Philosophy (Metaphysics, Epistemology, Logic, History of Philosophy) at McGill.
Value: Maximum value $10,000 (awards of lesser value may be made in certain cases). The holder may apply for a second year of tenure.
Application: Awarded by the Department of Philosophy.

GUY DESAUTELS MEMORIAL PRIZE
Value: A prize established by the friends and colleagues of the late Guy Desautels.
Application: Awarded by the Department of Philosophy to a graduate student who has done outstanding work in the history of philosophy.

RAYMOND KLIBANSKY PRIZE IN PHILOSOPHY
Established in 2006 through a bequest by Raymond Klibansky, Emeritus Professor of Philosophy. Professor Klibansky was born in Paris in 1905 and received his doctoral degree from Heidelberg in 1928. He was a distinguished scholar and philosopher at McGill University since 1946 and a long-serving Chair of the department. He was one of the leading figures in philosophy in the 20th century.
Eligibility: Awarded by the Department of Philosophy, Faculty of Arts, to the graduate student who defends the best doctoral thesis in the field of history of philosophy.
Estimated value: $1,350.

5.3.15 Political Science

ALEXANDER MACKENZIE FELLOWSHIP IN POLITICAL SCIENCE
Eligibility: Tenable by a graduate of any accredited university, conditional upon acceptance by GPS in the field of Political Science. A certain amount of tutorial and teaching work is required.
Value: One award of $5,000 and one of $3,000; possible renewal.
Application: No application is required.

DALE C. THOMSON PRIZE IN POLITICAL SCIENCE
Established in 2001 by Lizanne Ryan Thomson in loving memory of her husband Dale C. Thomson, a long-standing and dedicated professor at McGill University. Awarded by the Department of Political Science to an outstanding doctoral student. Preference shall be given to students studying in the field of Canadian Politics.
Value: Minimum $1,000.

GUY DRUMMOND FELLOWSHIP IN POLITICAL SCIENCE
Eligibility: Originally endowed by the late Guy M. Drummond, killed in action in 1915, to encourage study in France. Recipients are nominated by the Department of Political Science, with preference to graduating honours students, on the basis of academic record, likelihood of valuable future contribution to Canadian life and proficiency in French, among other things. Fellowships are tenable for study at an approved University or institute in Paris. One-year fellowships may also be offered as entrance awards to Masters or Ph.D. students in political science intending to carry out graduate work related to France, or for continuing students to support a year in France as part of the graduate program.
Value: $21,000 for up to two years, including $8,500 for one year of study at McGill and $12,500 for one year of study in Paris. One-year fellowships may also be offered.
Application: Awarded by the Faculty of Arts on the recommendation of the Department of Political Science.
JAMES R. AND FRANCES K. MALLORY GRADUATE AWARD
Eligibility: Awarded by the Department of Political Science to an entering graduate student with outstanding academic credentials who intends to pursue studies on topics related to Canada.
Value: $3,000; non-renewable.

NATHAN STEINBERG FELLOWSHIP IN POLITICAL SCIENCE
Established in 1994 by a gift from the Nathan Steinberg Family Foundation.
Eligibility: Awarded by the Faculty of Arts to graduate students in the Department of Political Science.
Value: $15,000; renewable once.
Application: Students to be nominated by the Department of Political Science.

5.3.16 Social Studies of Medicine

MARGARET LOCK PRIZE IN SOCIAL STUDIES OF MEDICINE
Established in 2005 by Dr. Margaret Lock for graduate students who have completed at least one year of studies in the Department of Social Studies of Medicine.
Eligibility: Awarded by the Faculty of Medicine Scholarships Committee upon recommendation from the Department of Social Studies of Medicine to an outstanding student who demonstrates high academic standing in either the Medical Anthropology or Medical Sociology program.
Estimated value: $500.

5.3.17 Social Work

ENTRANCE FELLOWSHIPS:

ANNE D. FISH FELLOWSHIP IN SOCIAL WORK
Established through a bequest in 2008 in memory of Anne D. Fish, M.S.W. 1959.
Eligibility: Awarded annually by Graduate and Postdoctoral Studies, upon nomination from the School of Social Work, to a Master's or Doctoral student whose research is related to early childhood and family studies with preference given to studies in adoption and/or foster care services.
Value: Varies.

ESTHER KERRY AWARDS
Established by the Alumni Committee of the School of Social Work to honour Esther Kerry, a valuable member of the Committee for many years.
Eligibility: Awarded to students who wish to pursue graduate studies in Social Work.
Value: Varies.

HAZELDINE SMITH BISHOP FELLOWSHIP
Established in 1998 by a bequest from Hazeldine Smith Bishop who received a diploma from the Montreal School of Social Work in 1944.
Eligibility: Awarded by the School of Social Work, on the basis of academic standing, to graduate students pursuing studies in community development and administration.
Value: Varies.

HENRY OELBERG MEMORIAL AWARD
Created in memory of lifelong Jewish Community Foundation of Montreal colleague and friend, Henry Oelberg.
Eligibility: Awarded to a graduate student in the School of Social Work based on academic merit. Preference will be given to a student with a focus on community organization.
Value: Varies.

KEEFER FELLOWSHIP
Established by Mr. George Keefer.
Eligibility: Tenable by a student in Social Work who wishes to pursue graduate studies in social work practice related to the elderly.
Value: Varies.

MANNY WEINER RESEARCH AWARD
Established by Mr. Manny Weiner.
Eligibility: Awarded by the School of Social Work to a graduate student who is concentrating their studies in the field of social policy.
Value: Varies.

MARGARET GRIFFITHS AWARD IN CHILD WELFARE
Established in 1994 through a bequest from Professor Margaret Griffiths, a long-time member of the faculty of the McGill School of Social Work.
Eligibility: Awarded annually by the School of Social Work on the basis of academic and professional merit to an incoming full-time student in the Master of Social Work program, with a declared interest in services to children.
Value: Varies.

MARGARET MARY BURNS AWARD
Established in 1997 by a bequest from Margaret Mary Burns who received a Diploma from the Montreal School of Social Work in 1944.
Eligibility: Awarded on the basis of academic standing to graduate students by the School of Social Work.
Value: Varies.

MARK AND MILDRED GOLDENBERG FELLOWSHIP IN SOCIAL WORK
Established through a bequest in 2007 in memory of Mildred Heller Goldenberg, B.A. 1941, M.A. 1942, and Mark E. Goldenberg, B.A. 1934, M.S.W. 1967. Awarded by the School of Social Work on the basis of academic merit to a student entering a Doctoral program in social work.
Value: Varies.

MIRIAM AND E. MICHAEL BERGER FELLOWSHIP
Eligibility: Awarded annually by the School of Social Work to a graduate student of the School whose area of practice or research is in the field of community organization and/or social policy and who demonstrates academic competence and financial need.
Value: Varies.

MYER KATZ FELLOWSHIP IN SOCIAL WORK
Established in 1986 by contributions from former students, colleagues and friends, the School of Social Work Alumni Committee, and the McGill Advancement Program, on the occasion of the retirement of Professor Myer Katz from the Directorship of the School of Social Work.
Eligibility: Awarded annually to a student pursuing graduate studies related to clinical social work practice.
Value: Varies.

PROJECT AWARDS:

FREDA L. PALTIEL AWARD FOR IMMIGRANT AND MINORITY WOMEN'S HEALTH AND DEVELOPMENT
Eligibility: For students or faculty of the McGill School of Social Work to undertake a research service or demonstration project concerned with the health needs of immigrant and visible minority women and their families. Preference will be given to projects undertaken with the involvement of the intended beneficiaries.
Value: Varies.
Application: Apply to the Director of the School of Social Work.
**JOAN MACFARLANE BAILIN RESEARCH AWARD**

The Award was established by Joan Macfarlane Bailin, a graduate of the McGill School of Social Work, to recognize and promote academic achievement by students in the School of Social Work. The Award will permit student to undertake activities (action research, projects, service demonstration projects, and seminars) relating to Aging and/or the aged.

**Eligibility:** Applicants must have completed one full year of study in the McGill School of Social Work. Preference will be given to submissions concerned with self-help, volunteerism and non-traditional and/or innovative work settings.

**Value:** $1,000.

**Application:** Apply to the Director of the School of Social Work by December 31. Applications must include the proposed activity in detail, a budget for the use of the funds, and the relevance of the activity to self-help, volunteerism and non-traditional and/or innovative work settings. The money cannot be used for salaries.

The award winner will be required to submit a report to the Director of the School of Social Work upon completion of the project, as well as a short précis that may be included in School newsletters and/or other communications.

**GRADUATION PRIZES:**

**LOTTE MARCUS SHELDON PRIZE**

Established in 2000 by a bequest from Lotte Marcus Sheldon, a former faculty member of the School of Social Work. Awarded annually by the School to a graduate student in Social Work who has generated a particularly innovative research or service project.

**Value:** Minimum $500.

**SCHOOL OF SOCIAL WORK ALUMNI PRIZES**

The Alumni Committee of the School makes three awards each year to graduating M.S.W. students:

1) Alumni Prize for the Outstanding M.S.W. Thesis
2) Alumni Award for Excellence in Clinical Practice
3) Alumni Prize for the Outstanding M.S.W. Independent Study Project

**Value:** $400 each.

5.3.18 Sociology

**OSWALD HALL DISSERTATION FELLOWSHIP IN SOCIOLOGY**

Established in 2005 through a donation from Oswald Hall, M.A. 1937 (University of Toronto Professor Emeritus and former Professor of McGill University from 1946 to 1955).

**Eligibility:** Awarded in alternate years by Graduate and Postdoctoral Studies upon recommendation of the Department of Sociology to a student who has completed the other requirements of his/her Doctoral degree and has begun writing his/her Doctoral thesis.

**Value:** $10,000; non-renewable.

**OSWALD HALL PRIZE**

Established in 1992 in honour of Oswald Hall, Professor Emeritus at the University of Toronto, who obtained his M.A. in Sociology from McGill and taught at McGill between 1946 and 1955. The prize has been endowed by donations, in particular royalties from the book *The Sociology of Work: Papers in Honour of Oswald Hall*, donated by the book’s editor, Professor Audrey Wipper of the University of Waterloo.

**Eligibility:** Awarded by the Department of Sociology to the best graduate student in the first year of studies.

**Value:** $350.

**SAMUEL LAPITSKY SCHOLARSHIP**

**Eligibility:** To be awarded on the recommendation of the Departments of Sociology or Anthropology (each in alternate years).

**Value:** Varies in order to aid with tuition fees.

**Deadline:** February 1.

**Application:** Apply to the Departments of Sociology in even years, or Anthropology in odd years.

5.4 Dentistry

**DR. AND MRS. I.N. PESNER MEMORIAL PRIZE**

Established in 2001 by a bequest from Dr. Isidore N. Pesner, D.D.S. 1920, and Mrs. I.N. Pesner, to fund a graduate student prize in the Faculty of Dentistry. Awarded by the Faculty of Dentistry to an outstanding graduate student already in a Residency or Post Graduate program, who will be presenting a paper at a national or international scientific meeting.

**Value:** Minimum $500.

**DR. E.T. & MRS. MARJORIE BOURKE AWARD**

Established by a bequest from Marjorie Bourke in memory of her husband, Dr. E.T. Bourke, D.D.S. 1923.

**Eligibility:** Awarded by the Faculty of Dentistry to a student pursuing graduate studies in dentistry.

**Value:** Minimum $1,800.

**DR. JAMES P. LUND FELLOWSHIP IN DENTISTRY**

Established in 2002 by a generous gift from a McGill graduate from Hong Kong. The fellowship will be awarded to an outstanding student who has graduated from a Chinese university and is entering a Postdoctoral, Ph.D. or M.Sc. program of study in the Faculty of Dentistry. Awarded by the Dean of the Faculty in consultation with the Graduate Studies Committee. In the event that there is no candidate fitting this description, the Dean and Graduate Studies Committee may consider scholars or professors visiting McGill University from a Chinese University. The recipient will be someone who can be expected to make a significant contribution to the advancement of science in their home country after the completion of their studies.

**Estimated value:** $20,000.

**DR. LYON BERCOVITCH MEMORIAL AWARD**

Established by a bequest from Olga Bercovitch in memory of her husband, Dr. Lyon Bercovitch, D.D.S., class of 1914.

**Eligibility:** Awarded by the Faculty of Dentistry to a student pursuing graduate studies in dentistry.

**Value:** Minimum $1,800.

**DR. SOO KIM LAN PRIZE IN DENTISTRY**

Established in 2000 by Arthur Lau, B.Arch. 1962, and Crystal S.C. Lau, B.Sc. 1962, M.Sc. 1964, for graduate students in the Faculty of Dentistry. Awarded by the Faculty of Dentistry to an outstanding graduate student who is entering a Residency or Post Graduate program.

**Value:** Minimum $1,000.

**DR. WAH LEUNG FELLOWSHIP**

Established in 1998 by a generous gift from a McGill graduate of Chemical Engineering (Class of 1959), from Hong Kong, in honour of Dr. Wah Leung, the first Dean of Dentistry at the University of British Columbia.

**Eligibility:** Awarded by the Faculty of Dentistry to an entering Postdoctoral, Doctoral or Master’s student in the Faculty of Dentistry who is working in pain, oral cancer or bone tissue research.

**Value:** Minimum $20,000; renewable once at the Master’s level and twice at the Postdoctoral and Doctoral levels.

**DR. YU-MING LAM FELLOWSHIP**

Established in 1999 by a generous gift from Dr. Yu-Ming Lam, D.D.S. 1972, and family in honour of Mr. Yin-Bun Lam.

**Eligibility:** Awarded by the Faculty of Dentistry to an entering Postdoctoral, Doctoral or Master’s student in the Faculty of Dentistry.

**Value:** $10,000, tenable for one year.
5.5 Education

DR. GAURI SHANKAR GUHA AWARD IN INTERNATIONAL DEVELOPMENT EDUCATION
Eligibility: Established in 2003 by Dr. Ratna Ghosh in her late father's name to recognize and promote the academic achievement of an outstanding graduate student pursuing research in international development education in the Faculty of Education. It is granted on the basis of academic excellence and aptitude for research.
Value: Minimum $1,000.

JACKIE KIRK FELLOWSHIPS
Established in 2009 by Andrew Kirk in memory of his wife, Jackie Kirk, for outstanding graduate students in the Faculty of Education.
Eligibility: Awarded annually by Graduate and Postdoctoral Studies upon the recommendation of the Faculty of Education to outstanding graduate students in the Faculty of Education. Preference will be given to those students whose research has a focus on any one or a combination of the following: post-conflict education on developing countries, women teachers, and girlhood studies.
Value: Varies.

THE STANSFIELD AWARD FOR SCHOOL-BASED CLASSROOM RESEARCH
Established in 2000 by bequest by Ellen Edith Grubb Stansfield, B.A. 1929, M.A. 1931, in recognition of her experience, leadership and interest in education in general, schools and classrooms in particular. Awarded by the Faculty of Education to a full-time graduate student whose research focuses on schools and classrooms and who is in the beginning stages of a thesis program (M.A. or Ph.D.).
Value: Minimum $1,000.

5.5.1 Educational and Counselling Psychology

DR. JOHN A. BRYANT MEMORIAL AWARDS
Established in 1988 by the Butters Foundation in memory of Dr. John A. Bryant, B.Sc. 1949, M.D. 1951.
Eligibility: Awarded annually to graduate students pursuing studies in the inclusion of students with handicaps into school and society, by the Department of Educational and Counselling Psychology.
Estimated value: $1,000 each.

JUDY FISH GRADUATE AWARD IN INCLUSIVE EDUCATION
Eligibility: Awarded by the Faculty of Education to a student enrolled in a Master's degree in Educational Psychology whose area of study/research is in Inclusive Education. The Graduate Award is based on academic merit, with consideration given to the student's involvement in the community and in extracurricular activities.
Value: Minimum $2,500.

5.5.2 Integrated Studies in Education

DELTA KAPPA GAMMA - DR. MILDRED BURNS AWARD FOR LEADERSHIP IN EDUCATION
Established in 2001 by the Delta Kappa Gamma Society in honour of Dr. Mildred Burns, a retired associate professor of the Faculty of Education. Awarded by the Faculty of Education Graduate Studies Scholarships Committee to a student upon graduation who has completed an M.A. in Educational Studies leadership option, on the basis of academic excellence. If two or more equally qualified students are identified, preference shall be given to a female student. The student should have two or more years of relevant professional experience in the educational field.
Value: Minimum $500.

GRETTA CHAMBERS FELLOWSHIP IN EDUCATION
Established in 2000 by a generous gift from the Friends of McGill University Inc. of New York to honour Grettia Chambers (B.A. 1947), Chancellor of the University from 1991 to 1999. Awarded to a deserving student in the postgraduate program in the Department of Integrated Studies in Education by GPS on the advice of the department with first preference to a U.S. citizen.
Value: $5,500.

5.5.3 Information Studies

ALBERT TABAH AWARD IN THE MASTER OF LIBRARY AND INFORMATION STUDIES PROGRAM
Eligibility: Awarded by the School of Information Studies to the graduating student who obtains the highest standing in the M.L.I.S. program
Value: Minimum $500.

AZELIE DE LENDRECIE CLARK AWARD
Value: Minimum $2,850.

BARBARA GRAW SMYTHE AWARD IN LIBRARY AND INFORMATION STUDIES
Value: Minimum $500.

BERNARD ANDERSON OWER AWARD
Bequeathed by Roma Elizabeth Jane Ower in honour of her late husband, a graduate of the School of Information Studies.
Eligibility: Awarded by the School of Information Studies on the basis of academic achievement.
Value: Minimum $1,500.

BETA PHI MU SCHOLARSHIPS
Eligibility: Open to a student at the Master's level accepted in a program accredited by the American Library Association.
Value: $1,500.
Deadline: March 15.
Application: Forms are available online at www.beta-phi-mu.org and should be sent to Beta Phi Mu, College of Information Studies, Florida State University, 101 Louis Shores Building, Tallahassee, FL 32306-2100.

CANADIAN LIBRARY ASSOCIATION SCHOLARSHIPS
Eligibility: Three scholarships are available to students in accredited library schools.
Value: Varies.
Application: Information and application forms are available from the Scholarships and Awards Committee c/o CLA/ACB Member Services Dept., Canadian Library Association, 328 Frank Street, Ottawa, Ontario, K2P 0X8. See www.cla.ca for more details.

CENTENARY PRIZE
Established in 2004 with alumni donations to celebrate 100 years of library education at McGill University.
Eligibility: Awarded by the School of Information Studies on the basis of academic achievement.
Value: $3,500.
DR. G.R. LOMER SCHOLARSHIPS
Offered annually in honour of the late Dr. G.R. Lomer, former Director of the School.
Value: Three scholarships of $1,300 each.

DR. HERBERT STANLEY BIRKETT AWARD
A gift by Miss Winfred Birkett in honour of her father, Dr. Herbert Stanley Birkett.
Eligibility: To be awarded annually to the student who obtains the highest grade in course GLIS 671.
Value: $200.

EASTERN CANADA CHAPTER SPECIAL LIBRARIES ASSOCIATION PRIZE
Eligibility: Awarded to the student in M.L.I.S. II who obtains highest standing in course GLIS 638 or equivalent.
Value: Varies.

ELIZABETH G. HALL SCHOLARSHIP FUND
Founded in honour of a former member of the McGill University Library staff.
Value: $1,000.

ETHELWYN M. CROSSELEY SCHOLARSHIP FUND
Founded in honour of a former student of the School.
Value: $1,000.

FINANCIAL ASSISTANCE FOR LIBRARY EDUCATION
American students are advised to see the Awards & Scholarships section of the American Library Association website (www.ala.org) for information on financial assistance for Library and Information Studies education.

H.W. WILSON FOUNDATION FELLOWSHIP
A grant in the amount of $10,000 for distribution as scholarship aid in amounts and manner considered appropriate by the School.

JANET AGNEW SCHOLARSHIP
From a bequest of the late Janet M. Agnew, a graduate of and former instructor in the School.
Value: $1,000.

JEAN BROWN SCHOLARSHIP
Value: $900.

LE PRIX BIBLIOTHÈQUE NATIONALE DU QUÉBEC - CHARLES H. GOULD
Eligibility: Created in 2001 for McGill students enrolled in the M.L.I.S program. It is awarded to a full-time student to foster research and training, and to encourage the pursuit of excellence. The jury of Le Prix BNQ comprises a representative of the BNQ, a professor and the Director of the School of Information Studies or a designated representative. Final selection is based on the academic record of the candidate as well as the quality of the candidate's written expression in French or English on a topic chosen by the BNQ.
Value: $5,000.

MARGARET DOWNEY PRIZE
Established in 1999 by a bequest from Margaret A. Downey, B.L.S. 1941. Eligibility: Awarded on the basis of academic merit to an M.L.I.S. student by the School of Information Studies.
Value: Minimum $500.

MARGERY TRENHOLME FELLOWSHIP
Established in 2002 through a bequest from Margery W. Trenholme, B.A. 1935, B.L.S. 1946. Eligibility: Awarded by the School of Information Studies to a graduate student who will be enrolled in one of its programs. Value: Minimum $6,500.

MARGERY TRENHOLME MEMORIAL AWARD IN LIBRARY STUDIES
Established in 2001 through a bequest from Margery Trenholme, B.A. 1935, L.L.S. 1946, a lifetime friend of libraries and advocate of their place in the community. Awarded to an M.L.I.S student on the basis of academic merit by the School of Information Studies.
Value: Minimum $1,000.

MAUT LIBRARIAN'S SECTION AWARD
Established by the McGill Association of University Teachers (MAUT) Librarians’ Section.
Eligibility: To be granted to a student admitted to the first year program of the School of Information Studies. Applicants must be presently employed full-time library assistants who will have completed two years’ continuous full-time employment with the McGill University Library System.
Value: $300.
Deadline: March 1.

MIRIAM H. TEES SCHOLARSHIP
Value: $1,000.

SPECIAL LIBRARIES ASSOCIATION SCHOLARSHIPS
Eligibility: For graduate study leading to a Master's degree at a recognized school of library or information science in the United States or Canada. College graduates or college seniors (citizens of the U.S. or Canada) with an interest in special librarianship are eligible.
Value: Up to three $6,000 scholarships.
Deadline: September 30.
Application: Further information and the online application may be found under Professional Development, Scholarships & Grants at www.sla.org.

SYRA DEENA TARSHIS FLEISHMAN BURSARY
Please see section 6.2, “McGill Student Aid”.

TERESA TROIDE PRIZE FOR EXCELLENCE IN INFORMATION STUDIES
Estimated value: $2,500.

VIRGINIA MURRAY PRIZE FOR CATALOGUING
Eligibility: Awarded to the student in M.L.I.S. I who obtains the highest grade in course GLIS 607.
Value: Varies.

VIVI MARTIN FELLOWSHIP
Established in 1999 through a bequest from Eleanor Roberta Powell in memory of Vivi Martin, B.A. 1945, B.L.S. 1948. Eligibility: Awarded to a graduate student who will be enrolled in a program in the School of Information Studies.
Value: Minimum $5,000.

WENDY PATRICK AWARD
Established by the McGill Medical and Health Libraries Association (MMAHLA) in 1989. Eligibility: To be awarded annually to the student who has the highest grade in course GLIS 671.
Value: $150.
5.5.4 Kinesiology and Physical Education

**DANIEL Q. MARISI AWARD**
Established in 2005 by Mrs. Roberta Marisi, family, friends, and colleagues in memory of Dr. Daniel Q. Marisi, noted sports psychologist.

**Eligibility:** Awarded by the Department of Kinesiology and Physical Education to a graduate student (Master's or Doctorate) in Sport or Exercise Psychology. The applicant must have been a full-time student for at least one semester of the current year. The applicant will also be assessed based on academic merit, conference presentations, and community service in sport and exercise psychology.

**Value:** $500.

**Application:** Submit application form to graduate program coordinator of the Department of Kinesiology and Physical Education by December 1.

**DAVID L. MONTGOMERY MEMORIAL AWARD**
Established in 2007 by John Cleghorn, B.Com. 1962, and Patte Cleghorn, Dip. Ed. 1962, as well as family, friends, colleagues, and former students in memory of noted sport and exercise physiologist Dr. David L. Montgomery. The award is also supported by the annual David L. Montgomery 10 Km Run, which takes place each year during Homecoming.

**Eligibility:** Awarded by the Department of Kinesiology and Physical Education to a graduate student in Sport and Exercise Psychology. The applicant must have been a full-time student for at least one semester of the current year. The applicant will also be assessed based on academic merit, conference presentations, and community service in sport and exercise psychology.

**Estimated value:** Minimum $1,000.

**Application:** Submit application form to graduate program coordinator of the Department of Kinesiology and Physical Education by February 1.

**R.E. WILKINSON AWARD**
Established by friends, colleagues and former students in honour of Prof. Robert E. Wilkinson, former Chairman of the Department of Kinesiology and Physical Education.

**Eligibility:** Awarded by the Department of Kinesiology and Physical Education to a student who has obtained a B.Ed. (Major in Kinesiology and Physical Education) or a B.Sc. (Kinesiology) from McGill and who is entering a full-time graduate program in the Department of Kinesiology and Physical Education. Applicants will also be assessed based on academic merit and exceptional professional leadership.

**Value:** $800.

**Application:** Submit application form to graduate program coordinator of the Department of Kinesiology and Physical Education by September 30.

5.6 Engineering

**BOURSES DE DOCTORAT HYDRO-QUÉBEC EN GÉNIE**
Established in 2007 by Hydro-Québec. Awarded by the Faculty of Engineering to outstanding students entering a full-time Doctoral degree program in the Faculty who are residents of Quebec.

**Value:** Minimum $15,000 each; renewable twice.

**BOURSES DE MAÎTRISE HYDRO-QUÉBEC EN GÉNIE**
Established in 2007 by Hydro-Québec. Awarded by the Faculty of Engineering to outstanding students entering a full-time Master's degree program in the Faculty who are residents of Quebec.

**Value:** Minimum $10,000 each; renewable once.

**CAE AWARD IN ENGINEERING EXCELLENCE**
Established in 2002 by CAE Inc. Founded in 1947, CAE is a global leader in the provision of simulation and control technologies and training solutions for aerospace, defence and marine markets. Awarded on the basis of high academic standing by the Faculty of Engineering Scholarships Committee. Preference shall be given to students entering their first year of graduate studies in either the Department of Electrical and Computer Engineering or the Department of Mechanical Engineering.

**Value:** Minimum $2,000.

**DR. ROBERT G.H. LEE FELLOWSHIP**
Established in 1998 by a generous gift from a McGill graduate of Chemical Engineering (Class of 1959), from Hong Kong, in honour of Dr. Robert G.H. Lee, B. Eng. 1947 (Metallurgical Engineering).

**Estimated value:** $10,000; renewable once at the Master’s level and twice at the Postdoctoral or Doctoral levels.

**Application:** Awarded by GPS on the recommendation of the Faculty of Engineering to an entering Postdoctoral, Doctoral or Master’s student in either Chemical Engineering or Mining and Materials Engineering.

**EMIL NENNIGER MEMORIAL FELLOWSHIP**
Funded by a donation from Mrs. F.S. Nenniger in memory of her husband’s outstanding contribution to engineering.

**Eligibility:** Awarded annually to graduate students of Chemical and Civil Engineering on the basis of scholastic ability and general promise.

**Value:** Two fellowships of $3,000.

**Application:** Apply to the Chair, Department of Chemical or Civil Engineering.

**ENGINEERING CLASS OF 1936 AWARD**
Established by graduates of the Engineering Class of 1936, in honour of their 60th reunion in 1996, to enable the Faculty of Engineering to attract high calibre candidates to McGill.

**Eligibility:** Available to students commencing graduate studies in Engineering with a preference to Ph.D. candidates. Awarded by the Faculty of Engineering Scholarships Committee based on recommendations by the Chairs and Directors of Departments and Schools within the Faculty.

**Value:** Minimum $3,000.

**HATCH GRADUATE FELLOWSHIPS IN ENGINEERING**
Established in 2008 by Dr. Gerald G. Hatch, B.Eng. 1944, D.Sc. 1990, for outstanding students in the Faculty of Engineering based on academic merit. Awarded annually by the Faculty of Engineering. Funding may be combined with that received by applicants through internal McGill sources or through agencies external to McGill. Preference will be given to students enrolled in doctoral programs, and to students in the Department of Mining and Materials Engineering or in related fields of research.

**Estimated value:** Varies.

**HELLER FAMILY FELLOWSHIP IN ENGINEERING**
Established in 2007 by William Jacob Heller, B.Com. 1978. Awarded by the Faculty of Engineering to an outstanding Doctoral student.

**Estimated value:** $10,000.

**J.M. BISHOP AWARD FOR ENVIRONMENTAL RESEARCH**
Established in 2004 by John M. Bishop, B.Eng. (Mechanical) 1947, for outstanding graduate students in the Faculty of Engineering.

**Eligibility:** Awarded as a top-up to a prestigious external fellowship by the Dean of the Faculty of Engineering upon the recommendations of the Chairs and Directors of the academic units in the Faculty, with preference to students conducting environmental research focused on reducing our dependency on non-renewable resources.

**Value:** Minimum $5,000; renewable once at the Master's level or twice at the Doctoral level.

**JOHN BONSALL PORTER SCHOLARSHIP**
Founded by Dr. W.W. Colpitts (B.Sc. 1899).

**Eligibility:** Open to full-time graduate students currently registered in a M.Eng. in Civil, Mechanical, or Electrical Engineering, preferably in Civil Engineering.

**Value:** Varies.
JOSEPH S. STAUUFFER FELLOWSHIP
Established in 1992 by a gift from the Joseph S. Stauffer Foundation to the Faculty of Engineering.
Eligibility: Awarded to students commencing graduate studies in Engineering with preference to Ph.D. candidates. Awarded by the Faculty of Engineering Fellowships Committee, based on the recommendations of Chairs and Directors of academic units in the Faculty.
Value: $5,000. In the event that the fellowship is awarded to an international student, the value may be increased to a maximum of $10,000; renewable.

LARS AND ALBERTA FIRING GRADUATE FELLOWSHIPS IN ENGINEERING
Established in 2006 by the late Lars Firing for outstanding graduate students in the Faculty of Engineering.
Eligibility: Awarded by the Faculty of Engineering to students accepted into a graduate degree program, preferably at the Doctoral level, in the Faculty of Engineering. Preference will be given to students enrolled in the Department of Chemical Engineering, and also to students pursuing research in any of the following fields: Bioengineering, including Biomedical Engineering; Environmental Engineering; Sustainable Development in Natural Resources; Alternative/Sustainable/Renewable Energy; Transportation Engineering and Pharmaceutical Chemical Engineering. Funding may be combined with that received by applicants through agencies external to McGill or through internal McGill sources.
Estimated value: $25,000; paid out over two years, provided the holder maintains satisfactory progress.

LEON AND SUZANNE FATTAL GRADUATE FELLOWSHIPS IN ENGINEERING
Eligibility: Awarded annually by the Faculty of Engineering to recruit outstanding students into the Faculty’s graduate degree programs. Preference to Doctoral Students.
Value: Varies; may be awarded as a full fellowship or as a partial fellowship when combined with funding from other sources.

LORNE TROTTER ENGINEERING GRADUATE FELLOWSHIPS
Established in 2006 by Lorne Trotter, B.Eng. 1970, M.Eng. 1973, D.Sc. 2006. Awarded annually by the Faculty of Engineering to recruit outstanding students into the Faculty’s graduate degree programs. Funding may be combined with that received by applicants through internal McGill sources or through agencies external to McGill.
Eligibility: The Lorne Trotter Engineering Graduate Fellowships are for new students accepted into a graduate research program within the Faculty of Engineering. Preference will be given to doctoral students.
Value: $15,000; paid during the first year of study.
Application: Awardees are selected by the Faculty of Engineering. Applicants submit their applications for financial aid with their application for admission.

RON RICE MEMORIAL AWARD
Established by family, friends, associates, students and graduates to honour the memory of Professor Ron Rice of the School of Urban Planning and the Department of Civil Engineering and Applied Mechanics, who passed away on August 20th, 2000.
Eligibility: Awarded to a student pursuing graduate studies in the field of Transportation Planning and/or Engineering, based on academic merit, by GPS on the recommendation of the School of Urban Planning and the Department of Civil Engineering and Applied Mechanics.
Value: $1,000.

SR TELECOM AWARDS
Established in 1997 through a generous gift from SR Telecom, Inc.
Eligibility: The awards will be presented each year to enhance major fellowships for students in Engineering and Computer Science.
Value: Minimum $4,000 each.

VADASZ DOCTORAL FELLOWSHIP IN ENGINEERING
Established in 2006 by the Vadasz Family Foundation to recruit outstanding students into the Faculty of Engineering's doctoral degree program. Awarded by the Graduate Fellowships Committee of the Faculty of Engineering to outstanding students, who are preferably Canadian citizens or permanent residents, and who are accepted into a doctoral degree program in the Faculty of Engineering at McGill University. Funding may be combined with that received by applicants through agencies external to McGill or through internal McGill sources.
Estimated value: $25,000; provided the holder maintains satisfactory progress.

WERNER GRAUPE INTERNATIONAL FELLOWSHIPS IN ENGINEERING
Established in 1999 by a generous gift from the late Werner Graupe and the Antje Graupe Pryor Foundation.
Eligibility: Awarded by Graduate and Postdoctoral Studies upon the recommendation of the Faculty of Engineering to an international student from a university in the European Union, enrolling in a Master's or Ph.D. program in Engineering at McGill. Preference is given to students from German and French universities, particularly Technische Universität Berlin. Students in Chemical and Civil Engineering are not eligible.
Value: $25,000; renewable once at the Master's level and twice at the Doctoral level.

5.6.1 Architecture

A.F. DUNLOP SCHOLARSHIPS
Travelling scholarships bequeathed in 1937 by the late Mrs. Catherine A. Dunlop. Administered by the School of Architecture.
Value: Varies.

ALVARO ORTEGA AWARD
Established in memory of Alvaro Ortega by his wife, Madeleine Ortega and colleagues. Prof. Ortega was a graduate of the McGill School of Architecture and established the School's graduate program in Minimum Cost Housing, where he taught for many years.
Eligibility: Awarded annually by the School of Architecture to a graduate student who is in financial need and good academic standing and whose research is in the area of low cost housing.
Value: $500.

AMERICAN INSTITUTE OF ARCHITECTS HENRY ADAMS MEDAL AND CERTIFICATES OF MERIT
Established in 1986 and awarded for general excellence to graduating students in the professional program of architecture schools recognized by the Institute. The medal and certificate are awarded by the School of Architecture to the top ranking student, and a second certificate to the second ranking graduating student.

ARCOP/ALCAN AWARD
Awarded annually to a student in the final semester of the M. Arch.1 program for a design project demonstrating particular sensitivity to the architectural and cultural traditions of its location. The winner will be selected by a jury of three members, at least one of whom is a professional architect who is not a member of the staff of the School of Architecture.
Value: $1,000.
CLIFFORD C.F. WONG FELLOWSHIP IN ARCHITECTURE

Established in 1987 by Clifford Wong, B.Arch. 1960, this prestigious award is open to students entering the graduate program in Architecture. According to the terms of the bequest, preference will be given to applicants from the People's Republic of China. Only in the event that there are no qualified applicants from China will the Fellowship be offered to a candidate from another country.

Value: A total fund of $12,000 is available annually, from which award(s) are made at the discretion of the School of Architecture Graduate Fellowships Committee.

DR. SOO KIM LAN PRIZE IN ARCHITECTURE

Established in 2000 by Arthur C.F. Lau, B.Arch. 1962, and Crystal S.C. Soo Lau, B.Sc. 1962, M.Sc. 1964, in memory of the latter's mother, Dr. Soo Kim Lan. The prize is awarded by a committee of staff of the School of Architecture to an outstanding student completing the second semester of study in the Master of Architecture program.

Value: $2,000.

FRED LEBENSOLD MEMORIAL FELLOWSHIP IN ARCHITECTURE

Established in 1987 by Mrs. Ruth Lebensold and Family in memory of Fred Lebensold, distinguished Montreal architect and Professor in the McGill School of Architecture from 1952-1955. Awarded annually by the School of Architecture Graduate Fellowship Committee, on the basis of academic merit, to a student entering the Master of Architecture Program.

Value: $3,500.

H.L. FETHERSTONHAUGH BOOK PRIZE

Established in memory of the late H.L. Fetherstonhaugh, M.C., F.R.A.I.C., F.R.I.B.A., R.C.A., a former member of staff in the School of Architecture. Awarded by the School of Architecture to the student with the highest standing in the course Professional Practice 1.

JOHN BLAND SCHOLARSHIP IN ARCHITECTURE

Established in 1998 by a generous gift from a McGill graduate of Chemical Engineering (Class of 1959), from Hong Kong, in honour of Professor John Bland, Director of the School of Architecture between 1941 and 1972. Awarded by a committee of staff of the School of Architecture to a graduating student to support work in China.

Estimated value: $5,000.

LOUIS B. MAGIL FELLOWSHIPS IN HOUSING

Established in 1989 by the Groupe Magil in recognition of the contribution to the home building industry in Quebec made by Mr. Louis B. Magil, B.Arch. 1936, architect and founder of Magil Construction Ltd.

Eligibility: Made annually by the School of Architecture to outstanding students in the Master's or Ph.D. Architecture program with preference to students with a Housing related concentration.

Estimated value: $4,500 each.

MAUREEN ANDERSON PRIZES IN ARCHITECTURE

Established in 1995 by faculty, staff and students to honour the dedicated service of Maureen Anderson, a staff member from 1960-1995.

Eligibility: Awarded to undergraduate or graduate students in the School of Architecture on the basis of course work judged to be of high merit and superior written quality. Selection will be made by a committee of staff of the School of Architecture.

Value: Two prizes of $200 each.

NORBERT SCHOENAUER AND DAVID FARLEY FELLOWSHIP IN ARCHITECTURE

Established in 2001 through a major donation by a Hong Kong graduate of the Chemical Engineering Class of 1959. Awarded by the School of Architecture to outstanding students in its postgraduate research programs addressing issues related to the urban environment.

Estimated value: $4,500.

NORBERT SCHOENAUER FELLOWSHIPS IN ARCHITECTURE

Established in 2008 through the estate of Astrid Schoenauer, wife of Norbert Schoenauer, and by Jutta Pallos, Norbert Schoenauer's sister. The fellowships honour the memory of Norbert Schoenauer, former professor at the School of Architecture. Awarded annually by the Faculty of Engineering, on the recommendation of the School of Architecture, to one or more graduate students enrolled in the School of Architecture.

Value: Varies.

PING KWAN LAU PRIZE IN ARCHITECTURE

Established in 2000 by Arthur Lau, B.Arch. 1962, and Crystal S.C. Lau, B.Sc. 1962, M.Sc. 1964, for graduate students in the School of Architecture. Awarded by the School of Architecture to an outstanding graduating student who has demonstrated excellence in the research, site analysis and program preparation for the final design project of the M.Arch. I Program.

Value: Minimum $500.

RADOSLAV ZUK GEOMETRY PRIZE

Established in 2008 by Professor Radoslav Zuk, B.Arch. 1956. Awarded by a committee in the School of Architecture for the M.Arch. final design project which exhibits the highest degree of mathematical rigor in its underlying geometry.

Value: $500.

RAY (RAYMOND TAIT) AFFLECK PRIZE IN DESIGN

Established in 1989 in memory of Raymond Tail Affleck (F.R.A.I.C., R.C.A.), B.Arch. 1947, by his family, colleagues and friends. Awarded to a student in the School of Architecture for distinction in Design in the M.Arch. I final design project. The winner will be selected by a jury of three members, at least one of whom is a professional architect who is not a member of the staff of the School of Architecture.

Value: $1,000.

RÉGIS CÔTÉ GRADUATE AWARD IN DESIGN AND SUSTAINABILITY

Established in 2008 by Mr. Régis Côté. Awarded by the School of Architecture to a graduate student in the Master of Architecture (professional) program upon completion of their studies who demonstrates excellence in design-based research related to sustainable environmental practices as found in their final architectural design proposition.

Estimated value: $4,000.

ROYAL ARCHITECTURAL INSTITUTE OF CANADA MEDAL

Offered to a graduating student in the professional program who, in the judgment of the Faculty of the School of Architecture, has completed the most outstanding final design project/thesis for that academic year and who shows promise of being an architect of distinction after graduation. Selection is made by the School of Architecture.

Value: Varies.

SCHOOL OF ARCHITECTURE FELLOWSHIPS

Eligibility: Offered annually (in January) to students in the graduate programs from funds contributed by graduates of the School of Architecture. First and second year students registered in the graduate programs in Architecture are eligible.

Value: Varies.
STUART A. WILSON MEMORIAL PRIZE
Established in 1991 in memory of Stuart Anthony Wilson by family, friends and colleagues. Stuart Wilson graduated from the McGill School of Architecture in 1943 and taught there from 1948 to 1991. The prize is awarded by a committee of staff of the School of Architecture to the student with the best portfolio in the annual Sketching School.
Value: $150.

WILFRED ONIONS MEMORIAL PRIZE
Established in 1991 in memory of Wilfred Onions, B.Arch. 1932, by family, friends and fellow graduates in Bermuda. This prize commemorates his passion for sketching and life-long commitment to the profession of architecture, and is awarded by a committee of staff of the School of Architecture to the student with the best single work in the Sketching School.
Value: $200.

WILFRED TRUMAN SHAVER SCHOLARSHIPS
Established in 1978 by a bequest of the late Mrs. Elizabeth Henley Shaver in memory of her husband. Travelling scholarships, administered by the School of Architecture.
Value: Minimum $2,200.

5.6.2 Chemical Engineering

THOMAS HALIBURTON HENRY AWARD
Established in 2000 in honour of Thomas Haliburton Henry, 1922-1944. Awarded by the Department of Chemical Engineering to an outstanding graduate student enrolled in the Department of Chemical Engineering.
Estimated value: $1,500.

WILLIAM H. GAUVIN FELLOWSHIP IN CHEMICAL ENGINEERING
Established in the memory of William H. Gauvin, O.C., B.Eng. 1941, M.Eng. 1942, Ph.D. 1945, D.Sc. (Hon.) 1985, former Professor of Chemical Engineering.
Eligibility: Awarded by GPS to a student in the first or second year of Ph.D. study upon recommendation of the Department of Chemical Engineering. No citizenship restrictions.
Estimated value: $15,000.

5.6.3 Electrical and Computer Engineering

CHARLES LEGEYT FORTESCUE FELLOWSHIP IN ELECTRICAL ENGINEERING
Eligibility: Candidates must have majored in the field of Electrical Engineering and have received a Bachelor’s degree from an engineering college of recognized standing. Preference will be given to applicants about to begin their first year of graduate work.
Deadline: November 15.
Value: Stipend of $24,000 for one year of full-time graduate work in Electrical Engineering at an engineering school of recognized standing located in the U.S. or Canada.

ERIC L. ADLER FELLOWSHIP IN ELECTRICAL ENGINEERING
Eligibility: Established in 2003 by a graduate alumnus in honour of his former research supervisor, Professor Emeritus Eric L. Adler, for outstanding graduate students. Awarded by Graduate and Postdoctoral Studies, upon the recommendation of the Department of Electrical and Computer Engineering, on the basis of academic merit.
Value: $10,000; renewable once at the Master's level, twice at the Ph.D. level.

GAR LAM YIP MEMORIAL FELLOWSHIP IN GUIDED WAVE PHOTONICS
Established in 2000 by family, friends and colleagues in memory of Dr. Gar Lam Yip, distinguished professor in the Department of Electrical and Computer Engineering from 1973-1999. Awarded by GPS on recommendation of the Department to a top student at the Master’s level in Electrical and Computer Engineering.
Estimated value: $16,500 per year; renewable.

MOTOROLA FOUNDATION GRADUATE AWARD IN ELECTRICAL AND COMPUTER ENGINEERING
Established in 2001 by the Motorola Foundation in conjunction with the Motorola Canada Software Centre (MCSC). Awarded by the Department of Electrical and Computer Engineering to graduate students in Electrical, Computer or Software Engineering on the basis of outstanding academic achievement, with consideration for teamwork and leadership qualities. Preference will be given to Canadian citizens or permanent residents of Canada with an interest in wireless telecommunications or communications.
Value: $3,750.

5.6.4 Mechanical Engineering

M.P. PAIDOUSSIS PRIZE IN MECHANICAL ENGINEERING
Established in 1993 by M. P. Paidoussis, Professor of Mechanical Engineering.
Eligibility: Awarded by the Department of Mechanical Engineering to the author of the best Master of Engineering thesis (in terms of content and literary style), for a student proceeding to doctoral study.
Value: $1,000.

5.6.5 Mining and Materials Engineering

B.J. HARRINGTON BURSARY IN MINING ENGINEERING
Supported by graduates in Mining Engineering in memory of the late Professor B.J. Harrington.
Eligibility: Awarded annually to a suitable graduate student.
Value: $4,000.

CANADIAN INSTITUTE OF MINING AND METALLURGY MONTREAL BRANCH LOAN FUND
Established in 1958 by the Montreal Branch of the Institute of Mining and Metallurgy to provide loans to students in Geological Sciences, Metallurgical Engineering, and Mining Engineering.

HORACE G. YOUNG FELLOWSHIPS
Eligibility: Awarded to graduates of McGill University who are conducting advanced research in the Department of Mining and Metallurgical Engineering.
Value: Seven awards of $3,000 each are made annually.
Application: Awarded by GPS on the recommendation of the Chair of the Department of Mining and Materials Engineering.

JAMES DOUGLAS FELLOWSHIPS IN MINING ENGINEERING
Eligibility: Awarded annually to suitable graduate students.
Value: Five research and teaching fellowships of $2,000 each in the Department of Mining and Materials Engineering endowed by the late Dr. James Douglas.

SIR WILLIAM DAWSON FELLOWSHIP IN METALLURGY
Endowed in memory of the late Sir William Dawson, Principal of McGill University from 1855 to 1893.
Value: Two research and teaching graduate awards of $6,000 or six undergraduate awards totalling $12,000 in the Department of Mining and Materials Engineering.
WILLIAM STEWART RUGH SCHOLARSHIP
Endowed by the late Helen Stewart Rugh in memory of her father, William Stewart Rugh.
Eligibility: The awards are made on the recommendation of the Chair of the Department of Mining and Materials Engineering.
Value: Five research and teaching postgraduate awards of $3,000 each or up to ten undergraduate awards of $1,500 each in the Department of Mining and Materials Engineering.

5.6.6 Urban Planning

HAROLD SPENCE-SALES PRIZE IN URBAN PLANNING
Established by graduates and friends of the School of Urban Planning to commemorate the fiftieth anniversary of the founding of urban planning education in Canada at McGill University by Professor Harold Spence-Sales.
Eligibility: Awarded to a student entering the second year of graduate studies, based on academic achievement, by GPS on the recommendation of the School of Urban Planning.
Value: Minimum $250.

NORBERT SCHOENAUER AND DAVID FARLEY FELLOWSHIP IN URBAN PLANNING
Established in 2001 through a major donation by a Hong Kong graduate of the Chemical Engineering Class of 1959. Awarded by the School of Urban Planning to outstanding students in its postgraduate research programs addressing issues related to the urban environment.
Estimated value: $4,500.

5.7 Law

AUBREY SENEZ FELLOWSHIP
Bequeathed by Aubrey Senez.
Eligibility: Awarded to a student entering a graduate program in the Faculty of Law, specializing in international business law. Preference is given to students from Montreal's South Shore.
Value: Minimum $10,000; renewable.

BOEING FELLOWSHIPS IN AIR AND SPACE LAW
Established in 2007 by Boeing for outstanding Master's and Doctoral students in the Faculty of Law's Air and Space Program. Awarded by Graduate and Postdoctoral Studies upon recommendation of the Faculty of Law.
Value: Master's: $18,000 each; renewable once. Doctoral: $20,000 each; renewable twice.
Note: Each of these fellowships is accompanied by a fellowship support allowance, administered by the Faculty of Law, of up to $2,000 per year at the Master's level and up to $5,000 per year at the Doctoral level.

BOURSE DE DOCTORAT HYDRO-QUÉBEC EN DROIT
Established in 2007 by Hydro Québec. Awarded by Graduate and Postdoctoral Studies upon nomination from the Faculty of Law to outstanding students entering a full-time Doctoral degree program in the Faculty of Law who are residents of Quebec.
Eligibility: Awarded to a student entering a graduate program in the Faculty of Law.
Value: $15,000; renewable twice.

BOURSE DE MAÎTRISE HYDRO-QUÉBEC EN DROIT
Established in 2007 by Hydro Québec. Awarded by Graduate and Postdoctoral Studies upon nomination from the Faculty of Law to outstanding students entering a full-time Master's degree program in the Faculty of Law who are residents of Quebec.
Eligibility: Awarded to a student entering a graduate program in the Faculty of Law.
Value: $10,000; renewable once.

CHIEF JUSTICE R.A. GREENSHIELDS MEMORIAL SCHOLARSHIPS FOR GRADUATE STUDIES
Eligibility: Bequeathed by the late Mrs. R.A.E. Greenshields in memory of her husband, the late Chief Justice Greenshields, B.A., B.C.L., D.C.L. and LL.B. These scholarships will be awarded to outstanding students, Canadian or foreign, entering the first year of graduate studies in the Faculty of Law. The thesis scholarships are awarded to outstanding students, Canadian or foreign, who are registered in the Master's program, who have already commenced work on their thesis, and who are in need of funds to aid with the expenses of their thesis research.
Value: $5,000 scholarships renewable on a fully competitive basis; $1,000 thesis scholarships non-renewable.
Application: Scholarships: none; on the basis of the candidate's application for admission to graduate studies in Law. Thesis scholarships: students will be contacted by the Faculty of Law.

CLIVE V. ALLEN FELLOWSHIP IN INTERNATIONAL BUSINESS LAW
Established in 1999 through a substantial contribution by Nortel Networks Corporation on the retirement of Clive V. Allen, B.A. 1956, B.C.L. 1959, following 25 years of service as Nortel's Chief Legal Officer, and subsequent generous contributions by Mr. Allen and some of his friends in the legal community.
Eligibility: Awarded by the Faculty of Law to a student entering the first or second year of graduate studies in law, preference being given to doctoral students and/or students specializing in international business law.
Estimated value: $10,000.

ERIN J.C. ARSENAULT FELLOWSHIPS IN SPACE GOVERNANCE
Established in 2008 by the Erin J.C. Arsenault Trust for graduate students engaged in research on the pursuit of peace and security in outer space through law, policy and global governance. Administered by Graduate and Postdoctoral Studies on nomination by the Faculty of Law.
Value: $18,000 for LL.M. or $25,000 for D.C.L.

GUältIERRI-DORAN AWARD
Established in 1999 by Dr. Domenico John Doran in memory of his aunt Rosa Bianca Guàltieri, B.A. 1948, B.C.L. 1951, and his sister, Cheryl Rosa Teresa Doran, LL.B/B.C.L. 1984, who practised law together.
Eligibility: Awarded by the Faculty of Law, on the basis of Academic Merit, to a graduating student who wishes to pursue further studies in law or a related discipline. Special consideration will be given to students who demonstrate financial need and have made a distinctive contribution to the profession of law or the wider community.
Value: $1,750.

JOHN AND EDMUND DAY AWARD FOR GRADUATE STUDIES IN LAW
Established in 1996 by a generous bequest by Isabelle Day in memory of her grandfather, Edmund Thomas Day and great-grandfather, John James Day, both graduates of the Faculty of Law.
Eligibility: Awarded by the Faculty of Law to a graduate student in Law.
Value: $2,000 - $5,000.
Application: None; on the basis of the candidate's application for admission to graduate studies in Law.

MACDONALD GRADUATE FELLOWSHIPS
Two Macdonald Graduate Fellowships, founded by the will of the late Sir William Macdonald, will be awarded by Graduate and Postdoctoral Studies, on the recommendation of the Faculty of Law to two meritorious students, admitted to one of the Faculty's thesis graduate programs, in order to enable such students to pursue graduate studies in law at McGill. Preference will be given to students intending to study at the Doctoral level. In the case of a Doctoral student who receives the fellowship, it may be renewed for a second year subject to the student maintaining good standing in the program and obtaining a highly satisfactory progress report on the thesis.
Value: $10,000 each.
O’BRIEN FELLOWSHIP FOR HUMAN RIGHTS AND LEGAL PLURALISM
Established in 2005 by David O’Brien, B.C.L. 1965, for outstanding graduate students studying in the area of Human Rights and Legal Pluralism in the Faculty of Law.
Eligibility: Awarded by Graduate and Postdoctoral Studies upon recommendation of the Faculty of Law.
Value: Minimum $25,000; renewable once at the Master’s level and twice at the Doctoral level.

PILARCZYK GRADUATE AWARD IN LAW
Eligibility: Awarded on the basis of merit by the Faculty of Law.
Preference will be given to LL.M. or D.C.L. students in the general concentration of Legal History.
Estimated value: $500.

PROFESSOR MASAO SEKIGUCHI FELLOWSHIPS IN AIR AND SPACE LAW
Established in 2008 by Mrs. Teruko Sekiguchi in honour of her husband, Professor Masao Sekiguchi (1934-2004), LL.M. 1982, a graduate of the Institute of Air and Space Law. Successful applicants to the LL.M. programs offered by the Institute of Air and Space Law are eligible to be selected as Sekiguchi Fellows by the Graduate Admissions Committee. Fellowships will be offered in the course of the admissions process administered by the Faculty of Law and the University.
Value: Varies; determined by the Graduate Law Admissions Office.

RICHARD H. TOMLINSON DOCTORAL FELLOWSHIPS
Richard H. Tomlinson (Ph.D. ‘48, McGill University) enjoyed a career in Chemistry that won him national recognition as a university teacher and success as an inventor and entrepreneur. In the year 2000, Richard H. Tomlinson created an exceptional series of student awards with the aim of giving the finest young minds the opportunity to study at McGill University.

The Tomlinson Fellowships are destined to D.C.L. students. These renewable fellowships are awarded annually by Graduate and Postdoctoral Studies upon recommendation of the Faculty of Law.
Value and tenure: $25,000 per annum; renewable annually based on satisfactory progress, to a maximum tenure of 3 years.
The student must be in residence at the Faculty of Law.

ROBERT E. MORROW, QC, FELLOWSHIPS
Eligibility: Awarded by the Faculty of Law to outstanding students entering the first year of graduate studies in the Institute of Air and Space Law.
Value: Minimum $5,000.

SETSUKO USHIODA-AOKI PRIZE
Awarded by the Faculty of Law on the basis of academic merit to a graduate student in the LL.M. program at the Institute of Air and Space Law.
Value: $500.

WAINWRIGHT SCHOLARSHIP FOR LAW
Bequeathed by the late Arnold Wainwright, QC, B.A., B.C.L., D.C.L.
Eligibility: Awarded to outstanding students, Canadian or foreign, entering the first year of graduate studies at the Faculty of Law, McGill University, and intending to work on subjects of interest to, or pertaining to, the civil law tradition, or to students proceeding from the LL.M. to the D.C.L. program.
Value: One scholarship of $10,000.
Application: None; on the basis of the candidate’s application for admission to graduate studies in Law.

5.8 Desautels Faculty of Management

HIAN SIANG CHAN FELLOWSHIP IN MANAGEMENT
Established in 2007 by Hian Siang Chan, M.B.A. 1984. Awarded by Graduate and Postdoctoral Studies upon nomination by the Desautels Faculty of Management to an outstanding doctoral student in the Faculty. Preference will be given to students from Asia.
Value: $15,000; renewable twice.

5.8.1 CA and Public Accountancy

C. DOUGLAS MELLOR PRIZE
Established in 1981 by the Montreal-based Chartered Accountancy firms.
Eligibility: Awarded to a student in the Graduate Diploma Program in Public Accountancy whose academic record is judged to be outstanding among those who graduate during the academic year.
Value: $1,000.

KENNETH F. BYRD PRIZE
Established in 1981 by the Montreal-based Chartered Accountancy firms.
Eligibility: Awarded to a student in the Graduate Diploma Program in Public Accountancy whose academic record is judged to be outstanding among those who graduate during the academic year.
Value: $1,000.

LIONEL PELHAM KENT SCHOLARSHIP
Established in 1998 in memory of Lionel Pelham Kent, C.A., through the generosity of family and friends.
Eligibility: Open to students entering the final year of the C.A. program, who intend to continue their program of studies at McGill. Awarded by the Faculty of Management Scholarships Committee. The winner will be chosen based on outstanding skills in written and oral communication combined with high academic standing.
Value: $2,500.

5.8.2 Masters in Manufacturing Management

J. KEITH DRYSDALE MANUFACTURING MANAGEMENT GRADUATE FELLOWSHIP
Eligibility: Awarded on the basis of academic excellence to an outstanding graduate student in the Master in Manufacturing Management Program by Graduate and Postdoctoral Studies, upon the recommendation of the Director of the Manufacturing Management Program.
Value: $5,000; non-renewable.
Application: For further information, contact Patricia Strutz in the Master’s Programs office at 514-398-4648 or Marcela Cao, Program Coordinator at 514-398-7201 or visit www.mcgill.ca/mmm.

WERNER GRAUPE MEMORIAL MMM FELLOWSHIP
Established in 2001 in memory of Werner Graupe, a long-standing supporter and friend of the University, by the Master’s in Manufacturing Management (MMM) Program. Awarded by the MMM Program Fellowships Committee to graduate students in the MMM program. Preference shall be given to students who are Canadian citizens or permanent residents and demonstrate fluency in French and English. Priority given to full-time students; part-time students will be considered for partial awards in the absence of qualified full-time candidates.
Value: $20,000.
5.8.3 MBA

ALVIN J. WALKER GRADUATE FELLOWSHIP
Eligibility: Established by the estate of the late Alvin J. Walker. Awarded on the basis of academic merit to a student entering the M.B.A. program.
Value: $1,500.
Application: None; recipients are to be selected by the Faculty of Management Scholarships Committee.

ASSOCIATION DES M.B.A. DU QUÉBEC AWARD
This prize will be awarded to a graduating student on the basis of academic performance, and proven leadership both inside and outside the classroom.
Value: $1,000.

DEAN'S MEDAL FOR GREAT DISTINCTION IN THE M.B.A. PROGRAM
A sterling silver medal will be awarded each Spring by the Scholarships Committee of the Desautels Faculty of Management to the leading student in the full-time M.B.A. program.

DONALD E. ARMSTRONG AWARD
Eligibility: Awarded by the Desautels Faculty of Management Scholarships Committee on the basis of high academic standing, proven leadership skills and active involvement in the community to a student in the M.B.A. program. Candidates must submit an application and financial form.
Value: Minimum $3,000.
Application: For further information contact the M.B.A. Office, Faculty of Management.

DR. PETER BRIANT AWARD FOR ENTREPRENEURSHIP
Established by Seymour Schulich in memory of Professor Peter Briant, a teacher and mentor to many in the Desautels Faculty of Management. Awarded to Canadian students in the first year of the full-time M.B.A. program by the Desautels Faculty of Management. This award will be granted on the basis of entrepreneurial experience, potential and general scholastic ability. Candidates must submit an application, a statement providing evidence of entrepreneurial potential, a curriculum vitae and financial form.
Estimated value: $4,000.

EDWARD BALLON GRADUATE AWARD IN MANAGEMENT
Established in 1998 by the John Dobson Foundation in honour of Edward M. Ballon, B.A. 1947, a distinguished graduate who, while a student at McGill, was captain of the McGill Track Team, President of the Students’ Society of McGill and President of the Students Athletics Council. He later became President of the McGill Graduate Society and a member of the Board of Governors of the University.
Eligibility: Awarded by the Desautels Management Scholarships Committee to a full-time student entering the M.B.A. program on the basis of high academic standing, demonstrated leadership skills through involvement in extra-curricular activities and participation in a competitive sport. Candidates must be Canadian citizens.
Value: $2,000 - $2,500.
Application: Applicants must submit a one-page statement detailing their involvement in extra-curricular activities and participation in a competitive sport. The statement must be submitted at the time of application to the program.

EXCLUSIVE DEVELOPMENT INSTITUTE (E.D.I.) BURSARY
Eligibility: Awarded on the basis of work experience and financial need to Canadian students entering the second year of the full-time M.B.A. program from the part-time M.B.A. program.
Value: Maximum $2,000.
Application: Awarded by the Desautels Faculty of Management Scholarship Committee upon recommendation by the Student Aid Office. Candidates must submit a curriculum vitae and a financial aid form.

H.E. HERSCHORN GRADUATE SCHOLARSHIP
Eligibility: Established in 1965, tenable by a student entering either the first or the second year of the M.B.A. program. Open to Canadian students only.
Value: Current tuition fees.
Application: Awarded by the Faculty of Management Scholarships Committee; no application necessary.

LATIN AMERICA AWARD
Granted to students from Latin America entering the first year of the M.B.A. program. These awards will be based on academic excellence. All applicants to the M.B.A. program will be considered. Recipients will be notified at the time of admission.
Value: Two awards, $9,000 each; renewable for a second year.

M.B.A. ENTRANCE AWARD
Each year the Faculty of Management Scholarship Committee awards a limited number of M.B.A. Entrance Fellowships.
Eligibility: The selection is based on academic excellence.
Estimated value: $1,500; non-renewable.
Application: None; all applicants to the M.B.A. program will be considered. Recipients will be notified at the time of admission.

M.B.A. INTERNATIONAL STUDENT AWARD
All international students are considered for renewable awards. The number and size of these awards vary from year to year. The selection is based on academic excellence. All applicants to the M.B.A. program will be considered. Recipients will be notified at the time of admission.

PIALCZYK FELLOWSHIP
First awarded in 1997, this fellowship will be awarded every second year. The purpose of this award is to create a distinguished international fellowship that will enable outstanding students from Poland to pursue a two year Master of Business Administration at McGill Desautels Faculty of Management. The fellowship is intended to be a comprehensive award covering the principal expenses that such students will incur while in Canada.
Eligibility: Polish citizen under 40 years of age; degree equivalent to a Canadian Bachelors degree, record of high academic achievement; TOEFL of 600; two years' work experience, a written essay on career goals and expectations. Successful candidates must plan to return to Poland and participate in its economic life.
Value: $27,000.

ROGER C. BENNETT PRIZE IN MARKETING
Established in 1999 with the support of friends and family of the late Roger C. Bennett, distinguished Professor of Marketing (Desautels Faculty of Management), who had a zest for life.
Eligibility: Awarded by the Desautels Faculty of Management Scholarships Committee to a graduating M.B.A. student who has demonstrated academic achievement and community involvement.
Value: Minimum $1,250.

SHEILA WELLINGTON BMO FINANCIAL GROUP AWARD
Established by the Bank of Montreal in 1996 for students in the Faculty of Management.
Eligibility: Awarded by the Desautels Faculty of Management Scholarships Committee on the basis of high academic standing, leadership skills and community involvement to full-time students continuing in the M.B.A. or B.Com. program. Preference is given to female students in programs related to finance and/or economics.
Value: $6,000 for graduate students and $2,000 for undergraduates.
Application: Eligible students wishing to be considered for this award should submit a C.V. and appropriate documentation supporting their extra-curricular university or community contribution.
5.8.4 PhD (Management)

EDITH & NORMAN STRAUSS DOCTORAL FELLOWSHIP IN PROFESSIONAL ETHICS IN BUSINESS
Endowed in 1992 by Edith Strauss in memory of her husband, this fellowship is intended to commemorate the integrity and character of Norman Strauss. In 2008, on the passing of Edith Strauss, the fellowship was renamed to mark their shared vision for ethical business practices.

Eligibility: Awarded by the Desautels Faculty of Management to support outstanding doctoral students in Management who have demonstrated an interest in researching, studying and promoting business ethics. Consideration may be given to students pursuing research in the area of corporate social responsibility. Standing in the program to be evaluated by the Ph.D. Program Director.

Value: $10,000; renewable once, based on satisfactory standing in the program.

5.9 Medicine

ALEXANDER MCFEE FELLOWSHIP
Eligibility: Open to graduates of any approved university who are resident full-time candidates for higher degrees or diplomas at McGill. The award will be made in Physics, Chemistry, and Medical Sciences (with preference for Cancer research).

Value: $10,000.

DAVID G. GUTHRIE FELLOWSHIPS IN MEDICINE
Established in 2008 by David G. Guthrie, B.Sc. 1943, M.D.,C.M. 1944. Dr. Guthrie, a radiologist, wishes to acknowledge the education and opportunities provided to him by McGill and wishes to help future generations of medical students with their studies and medical ambitions. Awarded by McGill University Graduate and Postdoctoral Studies to Ph.D. students in the faculty of Medicine. Preference will be given to Canadian students.

Value: Varies.

DAVID MCCUTCHEON FELLOWSHIPS IN PEDIATRIC PALLIATIVE CARE
Established in 2008 by David McCutcheon, B.Eng. 1961. Awarded by the Faculty of Medicine on the basis of academic merit to one or more medical residents who are pursuing research in the area of Pediatric Palliative Care.

Value: Varies.

DR. VICTOR K.S. LUI FELLOWSHIPS
Established in 2008 by Dr. Victor Lui, B.Sc. 1967, M.D. 1971. Awarded by Graduate and Postdoctoral Studies upon the nomination of the Faculty of Medicine to a Ph.D. student whose studies are dedicated to cancer research.

Value: Varies.

EILEEN PETERS FELLOWSHIP
Established in 1993 with an endowment from the N.E. Peters Foundation. Awarded by GPS with preference being given to women. Consideration, if appropriate, will be given to students pursuing graduate studies in the Faculty of Medicine or the School of Nursing. No citizenship restrictions.

Value: $12,000; renewable twice.

FERRINGS PHARMACEUTICALS FELLOWSHIPS
Established in 2008 by Ferrings Pharmaceuticals in support of one or more outstanding graduate students pursuing research in the areas of Urology, Gastroenterology or Fertility. Awarded by Graduate and Postdoctoral Studies upon recommendation from the Faculty of Medicine to a student in either the Ph.D. or M.D./Ph.D. program.

Value: Varies.

GERALD CLAVET FELLOWSHIPS IN MEDICINE
Established in 2008 from the estate of the late Gerald Clavet.

Eligibility: Awarded on the basis of academic merit by Graduate and Postdoctoral Studies upon nomination by the Faculty of Medicine to outstanding graduate students.

Value: Varies.

LLOYD CARR-HARRIS FELLOWSHIP
Established in 1995 through the generosity of the Lloyd Carr-Harris Foundation.

Eligibility: The fellowships may be held by students registered in any graduate program in the health sciences at McGill. No citizenship restrictions.

Value: $15,000; renewable twice.

ROBERT C. PATERSON GRADUATE RESEARCH AWARDS
Established in 2008 by Ann S. Paterson, B.A. 1953, in support of Graduate Research in Suicide Prevention and Treatment in the Faculty of Medicine; research topics may include the area of epigenetics. Awarded by Graduate and Postdoctoral Studies upon the recommendation of the Faculty of Medicine.

Value: Varies.

5.9.1 Internal Studentships

Internal Studentships are open to highly qualified Faculty of Medicine graduate students who are registered full-time in a research training program leading to an M.Sc. or Ph.D. degree.

Internal Studentships are tenable for one year starting September 1. The Faculty of Medicine contribution for an M.Sc. student is $10,000 and for a Ph.D. student is $12,000. Supervisors are expected to supplement funded applicants with a minimum contribution of $8,000.

M.D./Ph.D. students are not eligible to apply for Faculty of Medicine Internal Studentships, they should consult the Director of the M.D./Ph.D. program regarding funding for which they are eligible.

Residents receiving remuneration from the RAMQ while pursuing a Master’s or Ph.D. degree are not eligible to apply to the Faculty of Medicine Internal Studentships program.

Students who apply for a Faculty of Medicine Internal Studentship are automatically considered for every award for which they are eligible. Amongst eligible applicants in cancer research, one will be recommended to Graduate and Postdoctoral Studies for an Alexander McFee Fellowship.

Applications are evaluated on the basis of academic performance; quality of the proposal; training environment; accomplishments (articles, abstracts, evidence of progress appropriate to the stage of the student’s career); and letters of support.

Successful applicants must be registered at McGill University when applying and for the duration of the award.

The deadline for applications is normally mid-late April. For further information and application forms, please consult www.medicine.mcgill.ca/research/bursary/default.htm.

CHARLES JAMES PATTON, M.D., AND ELIZABETH ROSS PATTON MEMORIAL PRIZE
Eligibility: Established in 2003 by a bequest from Charles Francis Patton in memory of his parents, Charles James Patton, M.D., and Elizabeth Ross Patton, awarded by the postgraduate awards committee to an outstanding graduate student for excellence in medical research.

Value: Minimum $400.

CLAUDE J.P. GIROUD BURSARY IN ENDOCRINOLOGY
Eligibility: Established by a bequest from Alix Auzolle Giroud in memory of her son, Dr. Claude J.P. Giroud, former professor of Experimental Medicine at McGill. Awarded on a competitive basis to a full-time graduate student pursuing research in Endocrinology.

Value: Varies.
DR. ARTHUR H. JUDSON FELLOWSHIPS
Established by a bequest from Frances Catherine Judson in memory of her husband. To be awarded by the Faculty of Medicine Postgraduate Awards Committee to graduate students as part of the Faculty of Medicine’s internal studentships.
Value: $10,500.

DR. JOHN A. LUNDIE RESEARCH FELLOWSHIP
Established in 2003 by a bequest by Dr. John A. Lundie for a graduate student pursuing cancer research.
Eligibility: Awarded by the Faculty of Medicine’s Postgraduate Awards Committee. Preference shall be given to candidates pursuing research in the causes and/or cure of cancer.
Value: $6,000.

ELAINE BÉLANGER GRADUATE STUDENTSHIP IN MEDICAL RESEARCH
Established in 2003 by a bequest from Elaine Bélanger for a graduate student pursuing medical research. Awarded by the Faculty of Medicine’s Postgraduate Awards Committee.
Value: Minimum $6,500.

ELIZABETH STEFFEN MEMORIAL AWARD
Established in 1995 by a bequest of the late Elizabeth Steffen, M.D. 1945, and awarded by the Faculty of Medicine to contribute to the support of a full-time graduate student pursuing research in the Faculty of Medicine.
Value: Varies.

ESTHER CUSHING FELLOWSHIP
Established in 1992 for a student working towards a Master’s or Doctoral degree in the Faculty of Medicine.
Value: Varies.

F.S.B. MILLER MEMORIAL FUND
Established in 1982 to provide support for Genetic and Viral research in Neurobiology.
Value: Varies.

GEORGE G. HARRIS FELLOWSHIP IN CANCER
Established in 1962 by a bequest of George G. Harris to provide a fellowship in Cancer Research.
Value: Varies.

GERSHMAN MEMORIAL SCHOLARSHIP FUND
Established in 1965 to record the bequest of funds from the Estate of Fannie Gershman as a memorial to her late husband Mr. Icko Gershman and herself. The income from this endowment is to be used for scholarships in the field of cancer research.
Value: Varies.

GORDON PHILLIPS FUND FOR RESEARCH IN CARDIOVASCULAR DISEASES
This fund provides a scholarship open to graduate students involved in cardiovascular research.
Value: Varies.

G. RUTHERFORD CAVERHILL FELLOWSHIP
Established in 1943 by Mrs. Rutherford Caverhill for full-time graduate study and training in the Department of Medicine.
Value: Varies.

HARRISON WATSON SCHOLARSHIP
Established in 1953 by a bequest from the late Harrison Watson and Ruth Appleton Watson in memory of their only son, Captain Aubrey Wentworth Harrison Watson, D.S.O., M.C. The purpose of the scholarship is to encourage research into the causes and cures of tuberculosis and other diseases of an allied character.
Value: Varies.

HUGH E. BURKE RESEARCH FUND
Established in 1972 for medical research with preference given to requests for financial assistance for full-time graduate students.
Value: Varies.

IRMA H. BAUER RESEARCH FUND
The income from a bequest by the late Irma H. Bauer to be used for the support of a full-time graduate student doing research in the field of epilepsy.
Value: Varies.

JAMES O. AND MARIA MEADOWS SCHOLARSHIP
Established to support graduate research preferably in the field of cancer, but worthy candidates working in other areas of medical or surgical research will also be considered.
Value: Varies.

JEANNETTE AND ABRAM VICTOR MEMORIAL SCHOLARSHIP
Eligibility: Open to full-time graduate students who are principally engaged in research on the physiology of the heart or its diseases.
Value: Varies.

JOHN MCCRAE FELLOWSHIP
Eligibility: Intended for graduate students of any approved medical school in the fields relating to surgery, urology, otolaryngology, radiology, etc.
Value: Varies.

JOSEPH SCHUBERT MEMORIAL SCHOLARSHIP
Eligibility: For graduates of any approved medical school who are principally engaged in full-time graduate studies on the physiology of the heart or its diseases.
Value: Varies.

J.P. COLLIP FELLOWSHIP IN MEDICAL RESEARCH
Eligibility: Fellows are awarded for studies at McGill in Anatomy and Cell Biology, Bacteriology, Biochemistry, Histology, Pathology, Pharmacology or Physiology. Candidates must be full-time graduate students (M.Sc. or Ph.D.) in one of these subjects.
Value: Varies.

MAYSIE MACSPORRAN GRADUATE STUDENTSHIPS
Established in 2002 by Maysie MacSporran, B.A. 1927, in memory of Esther Cushing and her parents, Dr. Frank R. England and Dr. Octavia Grace Ritchie England.
Eligibility: Awarded by the Faculty of Medicine's Postgraduate Awards Committee to top-ranked students in the official training programs in each of the Canadian Institutes of Health Research.
Value: Minimum $9,000 each.

RUTH AND ALEX DWORKIN SCHOLARSHIP
Established in 1989, the Ruth and Alex Dworkin Fund will provide scholarships to students, doing postgraduate work in the field of oncology, who would not be able to pursue their studies in the absence of financial assistance. Students will be selected by the Postgraduate Awards Committee.
Value: Varies.

SAMUEL LUPOVITCH MEMORIAL SCHOLARSHIP
Eligibility: Open to full-time graduate students who are principally engaged in research on the physiology of the blood or its diseases.
Value: Varies.

SAMUEL S. LERNER MEMORIAL AWARD
Established in 2002 by a bequest from Grace Bernice Lerner in memory of her husband, Samuel S. Lerner.
Eligibility: Awarded by the office of the Associate Dean, Graduate Studies and Research of the Faculty of Medicine, to outstanding graduate students pursuing cancer research.
Value: Minimum $250.
5.9.2 Multidisciplinary Research Awards

ALEXANDER MCFEE FELLOWSHIP
Eligibility: Open to graduates of any approved university who are resident full-time candidates for higher degrees or diplomas at McGill. The award will be made in Physics, Chemistry, and Medical Sciences (with preference for cancer research).
Value: $10,000.

HARRY SHANKMAN SCHOLARSHIPS
A bequest from the late Annette Shankman Rieder in honour of her brother Harry Shankman, M.D., provides annual scholarships for meritorious medical students in the M.D./Ph.D. program. Awarded by the Faculty of Medicine Scholarships Committee, on the recommendation of the M.D./Ph.D. Program Director.
Value: Minimum $3,000 each.

SIR EDWARD W. BEATTY MEMORIAL SCHOLARSHIPS FOR MEDICAL STUDENTS
Eligibility: Awarded annually to students of any nationality. Applies to students registered in the M.D.,C.M./Ph.D. program.
Value: Two scholarships, not necessarily of equal value.
Application: More information can be obtained by contacting the office of the Associate Dean, Medical Education and Student Affairs.

5.9.3 Multidisciplinary Clinical Awards

DR. BENJAMIN SHORE PRIZE IN PLASTIC SURGERY
Established in memory of Dr. Benjamin Shore, M.D.,C.M. 1965.
Eligibility: This prize will be awarded annually to a resident training in one of the McGill teaching hospitals who demonstrates outstanding performance in the Plastic Surgery Program. This prize will be used to fund travel to a national or international meeting in the field of plastic surgery or for special support of a resident doing research in plastic surgery. The Prize will be awarded by the Program Director of the Plastic Surgery Training Program in consultation with the Associate Dean of Postgraduate Medical Education.
Value: $4,000.

DR. EZRA LOZINSKI PRIZE IN CLINICAL MEDICINE
Established in 1989 in memory of Mrs. Deitcher's father, Dr. Ezra Lozinski, M.D.,C.M. 1920, M.Sc. 1923. The prize shall be awarded annually to a medical resident who is training in one of the McGill University teaching hospitals, and who demonstrates outstanding qualities of compassion, understanding, and acceptance of responsibility for ongoing care. Nominations will be submitted before May 1 of each academic year by clinical departments and the winner will be selected by the Faculty of Medicine Postgraduate Committee.
Value: $1,000.

DR. MILTON C. AND NINA E. WILSON AWARD
Established in 1970 by a bequest from the late Milton C. Wilson. The annual income provides support for Undergraduate or Postgraduate students in the Faculty of Medicine who are in Financial need.

FRANK LITVACK FELLOWSHIPS FOR CLINICAN SCIENTISTS
Established in 2008 by Frank Litvack, M.D.,C.M. 1979, through his foundation, the Litvack Family Foundation.
Eligibility: Open to post-graduate medical students or, in a truly exceptional case, M.D.,C.M. students, who have chosen to take a year from their residency or studies to pursue a research project. Awarded by the Faculty of Medicine to Medical Residents or M.D.,C.M. students of McGill University.
Value: $50,000.

5.9.4 Research Institute Awards

5.9.4.1 Cancer Centre

DEFI CORPORATIF CANDEREL STUDENTSHIP AND FELLOWSHIP
Eligibility: Open to Ph.D. and postdoctoral fellow candidates within their first year of working with staff of the McGill Cancer Centre and/or the Division of Research, Department of Oncology at McGill.
Application: Candidates must submit a C.V. with publications, letters of reference and an outline of their proposed project with investigator's name to: Dr. Michael L. Tremblay, McGill Cancer Center, 3655 Promenade Sir William Osler, Montreal, Quebec, H3G 1Y6.
Value: $10,000 Studentships; $15,000 Fellowships. One year support in both cases.

ROLANDE AND MARCEL GOSSELIN GRADUATE STUDENTSHIPS
Eligibility: Established in 2003 by a bequest from Rolande Dubreuil Gosselin. Awarded by the Faculty of Medicine’s Postgraduate Awards Committee to two Ph.D. students undertaking cancer research under the direction of a member of the McGill Cancer Centre.
Value: Minimum $12,500 each.

5.9.4.2 Montreal Children’s Hospital

MCGILL UNIVERSITY - MONTREAL CHILDREN'S HOSPITAL RESEARCH INSTITUTE FELLOWSHIPS
The McGill University - Montreal Children’s Hospital Research Institute offers a limited number of postdoctoral and research fellowships.
Eligibility: Medical, dental or doctoral graduates undertaking full time training in pediatric research. Candidate must be supervised by an investigator with formal primary affiliation with McGill University - Montreal Children’s Hospital Research Institute.
Deadline: December 1 for an April 1 or July 1 commencement date.
Value: Based on CIHR guidelines with respect to employment under grants.
Application: Forms are available from the Secretariat of the Research Institute, 4060 Sainte-Catherine Street West, Room 205, Montreal, Quebec, H3Z 2Z3.

MCGILL UNIVERSITY - MONTREAL CHILDREN'S HOSPITAL RESEARCH INSTITUTE.png

MCGILL UNIVERSITY - MONTREAL CHILDREN'S HOSPITAL RESEARCH INSTITUTE STUDENTSHIPS
The McGill University - Montreal Children’s Hospital Research Institute offers a limited number of studentships.
Eligibility: Master’s or Doctoral level students conducting pediatric research. Candidates must be supervised by an investigator with a formal primary affiliation with the McGill University - Montreal Children’s Hospital Research Institute.
Deadline: April 1 for a July 1 commencement date.
Value: $14,000 per year.
Application: Forms are available from the Secretariat of the Research Institute, 4060 Sainte-Catherine Street West, Room 205, Montreal, Quebec, H3Z 2Z3.

5.9.4.3 Montreal Neurological Institute

ISAACK WALTON KILLAM SCHOLARSHIPS/ JEANNE TIMMINS FELLOWSHIPS (NEUROSCIENCES)
Eligibility: The Montreal Neurological Institute offers fellowships for research and study in the fields of the clinical and basic neurosciences. Candidates must hold an M.D. or a Ph.D. degree. Those candidates with M.D. degrees will ordinarily have completed clinical studies in neurology or neurosurgery. Awards will be made on a strictly competitive basis.
Value: Initial appointments will be for one year with a maximum value of $25,000 (Canadian) with possible renewal.
Deadline: October 15 for a commencement date July 1 of the following year.
Application: Apply in writing to the Assistant to the Director of the Montreal Neurological Institute.

PRESTON ROBB FELLOWSHIP
Eligibility: Established in 1994 and awarded on a strictly competitive basis by the Montreal Neurological Institute (MNI) to support the training of a clinical fellow to work jointly with one of its basic and one of its clinician scientists. Candidates must have an M.D. degree with clinical studies in neurology or neurosurgery.
Value: Initial appointments, one year to a maximum value of $25,000.
Deadline: October 15 to MNI for a commencement date July 1 of the following year.
Application: Application forms are available from the Director's Office, MNI.

5.9.5 Academic Unit Awards

5.9.5.1 Biochemistry
ARTHUR S. HAWKES FELLOWSHIP
Established in 2000 through a generous bequest by Dr. Arthur S. Hawkes, Ph.D. 1945. Awarded by the Faculty of Medicine to an outstanding student in the Department of Biochemistry.
Value: Minimum $5,000.

5.9.5.2 Biomedical Engineering
GEDDES PRIZE IN BIOMEDICAL ENGINEERING
Dr. L.A. Geddes, B.Eng. 1945, M.Eng. 1953, Hon.D.Sc. 1971, established an annual prize in Biomedical Engineering at the discretion of the Chair of the Department of Biomedical Engineering.

JOHN F. DAVIS AWARD
Established in 2003 by John F. Davis, B.Eng. 1942, M.Eng. 1949, M.D.,C.M. 1950. Awarded every two years to a graduate student enrolled in the Department of Biomedical Engineering, by the Chair of the Department of Biomedical Engineering. The award will be for a significant contribution (Master's or Doctoral thesis, major conference paper or journal paper) for a subject applicable to diagnostic or treatment procedures for Neurological or Psychiatric disorders.
Value: Minimum $500.

5.9.5.3 Biomedical Ethics
I.M. RABINOWITCH FELLOWSHIP
Established in 2006 by a bequest from William J. Prager, in memory of I.M. Rabinowitch, M.D.,C.M. 1917, D.Sc. 1932. Awarded annually by Graduate and Postdoctoral Studies, on the basis of academic merit, and on recommendation of the Biomedical Ethics Unit of the Faculty of Medicine, to a graduate student in any degree program, who demonstrates an interest in the relationship between Science and Judaism.
Estimated value: $15,000; renewable once at the Master's level, twice at the Doctoral level.

5.9.5.4 Communication Sciences and Disorders
MONTREAL LEAGUE FOR THE HARD OF HEARING AWARD
Established by a gift from the Montreal League for the Hard of Hearing Inc. for students in training.
Eligibility: Candidates must be enrolled at the graduate level in the School of Communication Sciences and Disorders doing work in the area of hearing impairment. Awarded by the School.
Value: $1,000.

5.9.5.5 Experimental Medicine
DR. GERALD B. PRICE MEMORIAL AWARDS
Three awards, established in 2004, by family and friends, to honor Dr. Gerald B. Price's memory and his many contributions as Director of the Division of Experimental Medicine and as a full member of the McGill Cancer Centre.
Eligibility: Awarded by the Division of Experimental Medicine on the basis of merit, through an annual competitive process, to students enrolled in the second or third year of the Ph.D. program in the Division of Experimental Medicine. The awards will be used to enhance the students' graduate training by providing travel funds for the presentation of a scholarly contribution at a scientific conference. The amount of the award is expected to be matched by the awardee's supervisor.
Value: $650 each.

5.9.5.6 Microbiology and Immunology
WILFRED YAPHE AWARD
Established in 1986 by the Department of Microbiology and Immunology, in memory of Dr. Wilfred Yaphe, Professor in the Department from 1966 until his untimely death in 1986.
Eligibility: Granted upon recommendation of the Graduate Committee of the Department of Microbiology and Immunology, to one M.Sc. student and one Ph.D. student who were awarded their degrees during the academic year.
Estimated value: $750.

In addition to the following, several funding opportunities are available to students whose projects or doctoral theses are related to a nursing intervention research, e.g., G.R.I.S.I.Q. (Groupe de recherche inter-universitaire en sciences infirmières du Québec [www.grisim.ca]) and F.E.R.A.S.I. (Training and Expertise in Nursing Administration Research [www.ferasi.umontreal.ca]). Students should consult their advisors for more information.

ALUMNAE ASSOCIATION OF THE MCGILL SCHOOL OF NURSING SCHOLARSHIP
Eligibility: Scholarships are available for students in graduate programs.
Value: Minimum of $1,000 per award, prorated by student status.
Deadline: September 30.
Application: To the Chair of the Scholarship Committee.
Application form will be posted at www.mcgill.ca/nursing under the Current Student/Funding Opportunities for Students page at the start of the academic year (e.g., September).

CANADIAN NURSES FOUNDATION FELLOWSHIP
Members of the Canadian Nurses Foundation and Canadian Nurses Association may apply for awards for study at the Baccalaurate, Master's and Doctoral level. Special awards are identified for neuro-surgical, oncology, community health nursing, epidemiology, etc.
Eligibility: Applicants must be registered in a program and be willing to serve in a nursing position in Canada for one year for each academic year funded. Quebec applicants must apply for licensure in another Canadian province or territory in order to apply for a Fellowship.
Deadline: April 15.
Application: Apply to the Canadian Nurses Foundation, 50 The Driveway, Ottawa, Ontario, K2P 1E2 after November 1.

CORPORATION OF NURSES OF THE DISTRICT OF MONTREAL BURSARY
Bursaries are awarded yearly for study leading to a Master's degree or to a Doctorate in nursing.
Application: For further information re: application, please write to: Corporation of Nurses of the District of Montreal, 666 Sherbrooke Street W., Suite 1004, Montreal, Quebec, H3A 1E7.
EVELYN ROCQUE MALOWANY PRIZE IN NURSING
Eligibility: Awarded by the School of Nursing to a graduating student who has demonstrated initiative and leadership in the profession. 
Estimated value: $500. 

F. MOYRA ALLEN PRIZE
Established in 1987 in honour of Dr. F. Moyra Allen, B.N. 1948, Emeritus Professor of Nursing 1985, for her distinguished career and international renown. 
Eligibility: Awarded by the School to a graduating student in the Master's program who shows potential for a distinctive career in the study and practice of nursing. 
Estimated value: $1,500. 

IRMA K. RILEY AWARDS
Established through a bequest from Irma K. Riley, Cert. Nurs. 1951. Awarded on the basis of scholarly achievement by the School of Nursing to outstanding non-nurse applicants entering the Qualifying program for a Master’s degree in Nursing. 
Value: Minimum $2,800 each. 

NESSA LECKIE MEMORIAL AWARD
Eligibility: Awarded by the School of Nursing to an outstanding student enrolled in the Master's program in the School of Nursing whose major area of studies is mental health nursing, who is working or has previously worked in the nursing field in an area relating to mental health and who has demonstrated clinical expertise in this area. 
Estimated value: $2,300. 
Application: Application information will be posted at www.mcgill.ca/nursing under the Current Student/Funding Opportunities for Students page at the start of the academic year (e.g., September). 

ORDER OF NURSES OF QUEBEC BURSARIES
Awarded each year to nurses for studies leading to a Master's degree or to a doctorate degree in nursing. 
Value: Eight bursaries of $10,000 each. 
Deadline: March 15. 
Application: To the Ordre des infirmières et infirmiers du Québec, Secretary of the Committee on Bursaries, 4200 Dorchester Blvd. West, Westmount, Quebec, H3Z 1V4. 

ROYAL VICTORIA HOSPITAL SCHOOL OF NURSING ALUMNAE ASSOCIATION BURSARY
Bursaries are available for graduates of the Royal Victoria Hospital, School of Nursing, who have been accepted into an approved university program. 
Application: For further information, apply to the Alumnae Office, Nurses' Home, Royal Victoria Hospital, 687 Pine Avenue West, Montreal, Quebec, H3A 1A1. 

ST. JOHN AMBULANCE (ORDER OF ST. JOHN) OF CANADA BURSARIES
Eligibility: Available to experienced registered nurses preparing for leadership positions. Preference will be given to qualified applicants who are volunteers with St. John Ambulance. 
Estimated value: One bursary of $1,000 from the Margaret MacLaren Memorial Fund for studies at the Master's level. 
Deadline: February 15. 
Application: Apply to the Chair of Bursary Funds, St. John Ambulance, National Headquarters, 312 Laurier Avenue East, Ottawa, Ontario, K1N 6P6. 

W.K. KELLOGG FOUNDATION LOAN FUND
Estimated value: This fund was established to assist students who have unexpected expenses while registered in courses at the School of Nursing. 

Application: Consult the Director, Student Aid Office, Brown Student Services Building, 3600 McTavish Street, Montreal, Quebec, H3A 1Y2. 

5.9.5.8 Ophthalmology

PERCY HERMANT FELLOWSHIPS IN OPHTHALMOLOGY
This fellowship, established by Mr. Percy Hermant, is divided among the first-year residents in ophthalmology. 
Eligibility: Candidates must be graduates of Medicine at McGill or other approved medical schools, must be commencing the study of Ophthalmology at McGill and must be planning to practice this specialty in Canada. 
Application: Apply to the Chair, Department of Ophthalmology, McGill University. 

SEAN MURPHY AWARD
Established in 1997 from a bequest of Miss Dorothy Brown. 
Eligibility: Awarded by a committee of the Department of Ophthalmology to a student in ophthalmic pathology, with a preference for graduate students or postdoctoral fellows. 
Value: $8,000. 

5.9.5.9 Orthopaedic Surgery

ALBERT A. BUTLER AWARD IN ORTHOPAEDICS
Established in 2001 by Kaye Takamatsu-Butler in memory of Dr. Albert A. Butler, M.D.,C.M. 1935. The award will be used to support residents doing research in the field of orthopaedics and/or postgraduate orthopaedic training at McGill. This support can include travel funds for residents to attend conferences, the purchase of research equipment and acknowledgement gifts such as book prizes. Awarded by the Program Director of the McGill Orthopaedic Surgery Residency Program in consultation with the Associate Dean of Postgraduate Medical Education. 
Value: Maximum $6,550. 

DR. PHILIP EIBEL PRIZE IN ORTHOPEDIC SURGERY
Established in 1998 by Miss Deborah Eibel, B.A. 1960, in memory of her father, Dr. Philip Eibel, B.A. 1929, M.D.,C.M. 1933. 
Eligibility: The prize shall be awarded annually to a medical student, resident, or fellow who has exhibited outstanding achievement during training in Orthopedic Surgery. The selection shall be made by the Faculty of Medicine Scholarships Committee. 
Value: $500 each. 

5.9.5.10 Pathology

ROBERT MORE AWARD IN PATHOLOGY
Established in 1997 from a bequest of Miss Dorothy Brown. Awarded by a committee of the Department of Pathology to a graduate student or postdoctoral fellow. 
Value: One student at $15,000 or two students at $7,500 each. 

5.9.5.11 Pharmacology and Therapeutics

JAMES FROSST FELLOWSHIP
Established in 1990 by the Department of Pharmacology and Therapeutics through a donation from Merck Frosst Canada Inc. 
Eligibility: Primarily awarded by the graduate training committee to an outstanding international applicant to the program. 
Value: $10,000. 
Deadline: All international applicants conditionally accepted to the program prior to May 1 are considered for the Fellowship. 

MACINTOSH PRIZE IN PHARMACOLOGY
Established in 1991 for graduate studies in Pharmacology by the Department of Pharmacology and Therapeutics in honour of Professor F.C. Macintosh, a distinguished McGill scientist. Awarded annually to a student who has presented, within the last year, a senior seminar and who has progressed towards a submission of thesis. 
Estimated value: $700. 

McGill University, Graduate Fellowships and Awards 2009-2010
MELVILLE PRIZE IN PHARMACOLOGY
Established by honour Professor Kenneth I. Melville who was Chairman of the Department of Pharmacology and Therapeutics from 1953 to 1967 and Professor Emeritus from 1967 until his death in 1975.
Eligibility: Awarded annually to two graduate students: one senior, one junior; and one Postdoctoral Fellow whose research presentation at the annual Pharmacology Research Day (or equivalent occasion) is judged by an ad hoc advisory committee to be the best.
Value: $400/$200/$100.

THEODORE SOURKES PRIZE
Established in 1992 by the Department of Pharmacology and Therapeutics in honour of Professor Theodore Sourkes.
Eligibility: Awarded annually to recognize outstanding contribution by a graduate student in the Department of Pharmacology and Therapeutics, as judged from a paper published in a peer-reviewed journal.
Value: $700.

5.9.5.12 Physical and Occupational Therapy
BARBARA ROSENTHAL PRIZE
Established in 1992 as a tribute to Barbara Rosenthal’s, Dip. PT 1961, B.Sc. OT 1975, M.A. Ed. Tech. 1983, long-standing affiliation with the School of Physical and Occupational Therapy and her devoted years of service to the practice of occupational therapy.
Eligibility: Awarded to a full-time student in the Master's Program in Rehabilitation Science with preference being given to an Occupational Therapist. The prize will be given by the School of Physical and Occupational Therapy on the basis of high academic standing at the end of the first year of study.
Value: $300.

BOURSE DE RECHERCHE ANNE LANG ETIENNE
Offered to Occupational Therapists pursuing a Master’s or Ph.D. Degree who are full members of the Ordre des ergothérapeutes du Québec (OPEQ).
Value: $1,000 for Ph.D.; $750 for Master’s.
Application: November 1 - December 1. For further information, contact the Ordre des ergothérapeutes du Québec, 2021 Union Street, Suite 920, Montreal, Quebec, H3A 2S9; telephone: 514-844-5778; fax: 514-844-0478; email: ergo@oeq.org; website: www.oeq.org.

BOURSE DE RECHERCHE EN MILIEU CLINIQUE ET BOURSE D’ÉTUDES SUPÉRIEURES
Eligibility: Offered to Physiotherapists and also those registered in the Master’s Program.
Deadline: January 31.
Value: $1,250 (Graduate Studies) and $7,500 (Research).
Application: Apply to the Ordre des physiothérapeutes du Québec, 7151 Jean-Talon est, bureau 1000, Anjou, Quebec, H1M 3N8; telephone: 514-351-2770, toll free: 1-800-361-2001; fax: 514-351-2658; email: physio@opqq.qc.ca; website: www.opqq.qc.ca.

DR. PREMYSL “MIKE” PELNAR ACADEMIC ENRICHMENT AWARD
Established through a generous anonymous donation honouring Dr. Premysl Pelnar, a renowned occupational health physician.
Eligibility: Awarded to graduate students of the Department of Occupational Health to further their training and professional activities in the field of occupational health. Awarded by the Chair of the Department upon consultation with the Faculty.
Value: $300 - $600 per year.

JUDITH KORNBLUTH-GEFLAND PEDIATRIC FELLOWSHIP
Established by her husband and Dynamic Capital Corporation as a tribute to Judith Kornbluth-Gefland, Dip. PT 1958, Dip. OT 1959, B.Sc. PT 1976, in recognition of her interest in children suffering from neurological and neuromuscular disorders.
THE 2009-2011 RUTH SHAMAH SCHOLARSHIP
Established by the Psychiatry Department of the Jewish General Hospital in memory of Ms. Ruth Shamah who provided years of passionate and inspiring work as Head of the Occupational Therapy Department. Ruth demonstrated leadership in promoting high quality of care and publishing academic aspects of occupational therapy and will be remembered by numerous colleagues, trainees and now Occupational Therapists pursuing her search for evidence-based practices.
Eligibility: Awarded to an Occupational Therapist accepted into Master of Science in Rehabilitation Science level studies (research) from McGill University or Université de Montréal who will have selected a research project related to mental health. Quality and feasibility of the project as well as GPA will be additional selection criteria.
Value: $5,000 a year for a maximum of 2 years.
Deadline: June 15, 2009. Must include: the title, the aim of the project, the population and sample size calculations, the research design and methods as well as the time schedule.
Application: Submit to Suzanne Rouleau, Occupational Therapy Clinical Coordinator in Psychiatry, Institute of Community and Family Psychiatry - Jewish General Hospital, 4333 Cote Ste-Catherine Road, Montreal, Quebec, H3T 1E4; telephone: 514-340-8222 ext. 5154.

5.9.5.13 Physiology
DR. RICHARD I. BIRKS FELLOWSHIPS IN PHYSIOLOGY
Eligibility: Awarded by Graduate and Postdoctoral Studies upon recommendation from the Faculty of Medicine to an outstanding graduate student in the Department of Physiology.
Value: Varies.

5.10 Faculty of Religious Studies
A.R. GORDON AWARDS
Established in 1998 by a bequest from Janette R. Gordon in memory of her father, Rev. Alexander Reid Gordon, who was a Professor of Hebrew and Old Testament Literature at McGill University from 1907-1930.
Eligibility: Awarded on the basis of academic merit, by the Faculty of Religious Studies, to an undergraduate or graduate student in the United Theological College.
Value: Recruitment Scholarships (renewable) $7,500.
Additional Scholarships: Varies.
Application: Apply to the Dean of the Faculty of Religious Studies.

ARTHUR AND JESSIE LOCHEAD BURSARY FUND
Eligibility: Established in 1974 by a bequest from the Estates of Rev. and Mrs. A.W. Lochead to endow a bursary for students preparing for ordination and who are registered in the Faculty of Religious Studies.
Estimated value: $2,000.
Application: Apply to the Dean of the Faculty of Religious Studies.

DEIRDRE AND ROBERT STEVENSON AWARD
Eligibility: For students entering a graduate program at the Faculty of Religious Studies in which the study of Asian religions is a major component.
Value: $3,000.
Application: Awarded by the Faculty of Religious Studies.

HOUSTON BURSARY
Established by a bequest from Thomas Houston in 1915.
Eligibility: For students in the Faculty of Arts and the Faculty of Religious Studies studying for the ministry of the Presbyterian Church in Canada or the United Church of Canada, with preference given to candidates whose mother tongue is French.
Value: Varies.
Application: Apply to the Dean of the Faculty of Religious Studies.

SAMUEL FINLEY NATIONAL BURSARY
Established in 1954 by a bequest from Miss Margaretta L. Finley.
Eligibility: Awarded by the Dean of Religious Studies to a graduate student who is pursuing advanced studies in religion or theology.
Estimated value: $3,000.
Application: Apply to the Dean of the Faculty of Religious Studies.

TOPPING MEMORIAL BURSARY
Established in 1976 by C.W. Topping in memory of his father, the Reverend N.B. Topping, a minister of the Methodist Church of Canada for 50 years.
Eligibility: Awarded at the discretion of the Dean of the Faculty of Religious Studies to a graduate student pursuing advanced studies in religion or theology who has financial need and shows promise of becoming both a scholar and a humanitarian.
Estimated value: $1,000.
Application: Apply to the Dean of the Faculty of Religious Studies.

W.M. BIRKS AWARDS
Awarded to the students graduating with the best records in the B.A. (Religious Studies), B.Th., S.T.M. or M.A. (Religious Studies) programs.
Value: $200 each.

W.M. BIRKS FELLOWSHIP
Established in 1950 by donation from Mr. W.M. Birks-W.M. Birks Foundation.
Eligibility: Awarded at the discretion of the Fellowship Committee and the Dean of the Faculty of Religious Studies to a graduate student who is pursuing advanced studies in Religion and Theology.
Estimated value: $3,000.
Application: Apply to the Dean of the Faculty of Religious Studies.

5.11 Schulich School of Music
General Regulations in Music
1. Scholarships, awards, prizes and bursaries available in the Schulich School of Music are awarded at the discretion of the Dean and the Faculty Scholarships Committee. No applications are required as all incoming and current students will automatically be considered.
2. Awards are generally made in the Spring on the basis of auditions and/or dossiers of incoming students, and after the Spring term on the basis of academic standing during the preceding Fall and Winter terms.

ARTHUR AND HELEN HENDERSON SCHOLARSHIP
Eligibility: Preference will be given to students in organ and church music. Open to both graduate and undergraduate students.
Estimated value: $1,300.
CLARA LICHTENSTEIN MEMORIAL FELLOWSHIP  
Eligibility: To be awarded to an outstanding student for graduate studies in Music. Initiated by Helmut Blume in memory of Clara Lichtenstein, the first instructor in Music at the Royal Victoria College, prime mover in the founding of the McGill Conservatorium (1904) and its Vice-Director until her retirement in 1929.  
Estimated value: $8,000.

E. NOEL SPINELLI PRIZE IN MUSIC  
Established in 2004, by E. Noel Spinnelli, C.M. a devoted supporter of the Schulich School of Music and a lover of opera and vocal music.  
Eligibility: Awarded by the Schulich School of Music Scholarships Committee to an outstanding student in the Opera / Vocal area.  
Value: Minimum $200.

ERIC AWARD  
Eligibility: Awarded to a graduate or undergraduate student in the Schulich School of Music for outstanding achievement in the field of electro-acoustic music. Awarded by the Schulich School of Music Scholarships Committee on the recommendation of the staff of the Electronic Music Studio.  
Estimated value: $300.

FLORENCE MARJORIE BRACE AWARD  
Established in 1999 by the estate of Florence Agnes Bitcliffe Brace in loving memory of her daughter, Florence Marjorie Brace.  
Eligibility: Awarded by the Schulich School of Music Scholarships Committee to an outstanding undergraduate or graduate student in Music.  
Value: $1,000.

GIAN LYMAN MEMORIAL SCHOLARSHIP  
Established by the contributions of the family, friends and colleagues of the late Gian Lyman, a distinguished graduate of McGill's Faculty of Music, who died on April 22, 1974.  
Eligibility: To be given to a graduate or undergraduate student who is specializing in either the performance or history of early music.  
Estimated value: $1,500.

GUSTAV AND ROMANA BLUME MEMORIAL SCHOLARSHIP  
Established in 1982 by Helmut Blume in loving memory of his parents.  
Eligibility: Awarded by the Schulich School of Music Scholarships Committee to a graduate student. Preference may be given to a student in Performance.  
Estimated value: $1,000.

HELEN HALL PRIZE  
Established in honour of Helen Hall by her friends.  
Eligibility: Preference given to voice majors or students specializing in choral conducting. Open to both graduate and undergraduate students.  
Estimated value: $500.

HERBERT A. MORSE MEMORIAL SCHOLARSHIP  
Established in 1990 through a bequest from Dorothy E.M. Fairbairn in memory of her father.  
Eligibility: Awarded to an outstanding student in the Schulich School of Music.  
Estimated value: $3,000.

HERBERT C. CALEY AWARD  
Eligibility: Preference given to a student specializing in the performance or history of Baroque and early music. Open to both graduate and undergraduate students. Established by Mrs. Maude Caley in memory of her husband who died December 24, 1980.  
Estimated value: $500.

JOHN R.E. BRADLEY PRIZES  
Established in 2006 through a bequest from John R.E. Bradley, Sound and Lighting Technician at the Church of St. Andrew and St. Paul and a Montreal sound engineer whose career spanned from the 1930s to the 1990s. Awarded by the Schulich School of Music Scholarships Committee to outstanding graduate students in the Sound Recording Program.  
Estimated value: $5,000.

JULIUS SCHLOSS MEMORIAL AWARD  
Established by Mr. and Mrs. Oscar Schloss in memory of their brother, the composer Julius Schloss (1902-1972), one of the foremost pupils of Alban Berg in Vienna during the late 1920s and early 1930s whose collected works were donated by the family to the McGill Faculty of Music.  
Eligibility: This award is to be made to a graduate student in Music on the recommendation of the Graduate Committee of the Schulich School of Music.  
Estimated value: $1,200.

LEWIS LUTTER BURSARY  
Established in 1988 by the Guttman family in honour of Mr. Lewis Lutter, a loyal and devoted associate of many years of Progress Brand Clothes, Inc. Awarded by the Schulich School of Music to assist a talented student in the School who is in financial need.  
Estimated value: $1,000.

LLOYD CARR-HARRIS STRING SCHOLARSHIP  
Established in 1999 through a generous gift from the Lloyd Carr-Harris Foundation.  
Eligibility: Awarded by the Schulich School of Music Scholarships Committee on the recommendation of the String Area to exceptionally gifted string players entering an undergraduate or graduate program in Performance.  
Value: $10,000; renewable twice.

LUBKA KOLESSA PIANO AWARD  
Established in 2003 by friends and former students in honour of Lubka Kolessa, a legendary concert pianist and McGill Faculty of Music professor from 1960-1971.  
Eligibility: Awarded to an outstanding piano student by the Schulich School of Music Scholarships Committee.  
Value: Minimum $600.

MARGARET HOULDING MEMORIAL PRIZE  
Established in 1984 by the friends of the late Margaret Houlding.  
Eligibility: Awarded to a student in the Schulich School of Music.  
Estimated value: $700.

MARIANNA EATON SCHOLARSHIP  
Established by a bequest from the late Marianna Eaton (née Marianna Soulé Van Doren).  
Eligibility: Awarded to a graduate student in the Schulich School of Music.  
Estimated value: $2,300.

MARVIN DUCHOW MEMORIAL SCHOLARSHIP  
Established by the family and friends of Prof. Marvin Duchow, in his memory.  
Eligibility: To be awarded annually to a graduate student in Music.  
Estimated value: $1,300.

MAURICE POLLACK FOUNDATION FELLOWSHIP  
Initiated by the Foundation in memory of Maurice Pollack, man of commerce and great benefactor in the areas of education, religious institutions and communal welfare.  
Eligibility: To be awarded to an outstanding student for graduate studies in Music.  
Estimated value: $4,000.
MAX STERN FELLOWSHIP IN MUSIC
Established in 1992 through a donation from the Max Stern estate.
Eligibility: Awarded by GPS to Doctoral level students in Music on the recommendation of the Schulich School of Music. Exceptional students at the Master’s level who demonstrate potential for doctoral studies may be considered. No citizenship restrictions.
Value: $12,000; renewable.

OLYMPIA GARIBALDI-GALAVARIS PRIZE
Established in 2000 by Dr. George Galavaris in honour of his mother’s 76th birthday.
Eligibility: The award is open to graduate students in the Schulich School of Music. Awarded by the Schulich School of Music to a graduate student specializing in Musicology or Music Theory with a sub-speciality in Music before 1700.
Value: Minimum $500.

PHYLLIS AND BERNARD SHAPIRO FELLOWSHIP IN OPERA
Established in 2002 by faculty, alumni, family and friends in honour of Phyllis and Bernard J. Shapiro. Dr. Bernard J. Shapiro was the Principal and Vice-Chancellor of McGill University from 1994 to December 2002.
Eligibility: Awarded by the Schulich School of Music Graduate Committee to graduate or diploma students in Opera/Voice Performance.
Value: Minimum $5,000; renewable.

PHYLLIS AND BERNARD SHAPIRO FELLOWSHIP IN THEORY
Established in 2002 by faculty, alumni, family and friends in honour of Phyllis and Bernard J. Shapiro. Dr. Bernard J. Shapiro was the Principal and Vice-Chancellor of McGill University from 1994 to December 2002.
Eligibility: Awarded by the Schulich School of Music Graduate Committee to a graduate student in the Department of Music Research.
Value: Minimum $5,000; renewable.

RACHEL AND BENJAMIN SCHECTER MEMORIAL SCHOLARSHIP
Established in 1997 by a bequest from the late Dr. Samuel Schechter in memory of his parents, Rachel and Benjamin Schechter.
Eligibility: Awarded by the Schulich School of Music Scholarships Committee to any full-time student in a degree or diploma in Music.
Estimated value: $3,000.

SARA BER Lind MEMORIAL FELLOWSHIP
Established by a bequest from Sara Berlind.
Eligibility: Awarded by the Schulich School of Music to an outstanding student to pursue graduate studies in Music.
Value: $3,000 each.

SCHULICH SCHOLARSHIPS
Eligibility: Established in 2005 through an exceptional gift by Canadian Philanthropist Seymour Schulich. Awarded by the Schulich School of Music Committee to talented students in an undergraduate, graduate or diploma program. Holders of these scholarships are designated Schulich Scholars.
Value: Undergraduate: $5,000; renewable. Graduate: $10,000; renewable.

SCHULICH SCHOOL OF MUSIC ENTRANCE SCHOLARSHIPS
Eligibility: Available to all incoming graduate and undergraduate students in a degree or diploma program in Music. Awarded on the recommendation of the Department of Performance and the Department of Theory.
Value: $2,000.

SCHULICH SCHOOL OF MUSIC SCHOLARSHIPS
The fund originated through the generosity of patrons of the Martlet Concert and Ball that took place in April 1960. Subsequently, many former students and friends of the Schulich School of Music have contributed to the fund.
Eligibility: Available to all students in a degree or diploma program in Music, both graduate and undergraduate.
Value: $100 - $1,150.

THE GOLDEN VIOLIN AWARD
Established in 2006 through a generous gift from Canadian philanthropist Seymour Schulich. Awarded by the Schulich School of Music Scholarships Committee to an undergraduate, graduate, or diploma student in the Schulich School of Music who demonstrates exceptional potential in the String area.
Value: $20,000.

VERNA-MARIE PARR GÉLINAS AND PAUL-MARCEL GÉLINAS SCHOLARSHIPS
Eligibility: Awarded by the Schulich School of Music to talented students studying in an undergraduate or graduate program in the Schulich School of Music. Preference will be given to instrumentalists in the McGill Symphony Orchestra.
Estimated value: $1,500 each.

WIRTH FAMILY FELLOWSHIP IN MUSIC
Established in 2004 by Elizabeth Wirth and friends in memory of her parents, Lisl and Manfred Wirth.
Eligibility: Awarded by the Schulich School of Music Graduate Committee to graduate or diploma students in Opera/voice Performance.
Value: Minimum $5,000; renewable.

5.12 Science

ABDEL-MEGUID FAMILY FELLOWSHIPS
Eligibility: Established in 2009 by Tarek Abdel-Meguid, B.Sc. 1978, for outstanding graduate students conducting research in the Faculty of Science. Awarded by Graduate and Postdoctoral Studies upon recommendation by the Faculty of Science.
Value: Varies.

ALEXANDER MCFEE FELLOWSHIP
Eligibility: Open to graduates of any approved university who are resident full-time candidates for higher degrees or diplomas at McGill. The award will be made in Physics, Chemistry, and Medical Sciences (with preference for Cancer research).
Value: $10,000.

BOURSE DE DOCTORAT HYDRO-QUÉBEC EN SCIENCE
Established in 2007 by Hydro Québec. Awarded by Graduate and Postdoctoral Studies upon nomination from the Faculty of Science to outstanding students entering a full-time Doctoral degree program in the Faculty who are residents of Quebec.
Value: $15,000; renewable twice.

BOURSE DE MAÎTRISE HYDRO-QUÉBEC EN SCIENCE
Established in 2007 by Hydro Québec. Awarded by Graduate and Postdoctoral Studies upon nomination from the Faculty of Science to outstanding students entering a full-time Master's degree program in the Faculty who are residents of Quebec.
Value: $10,000; renewable once.

CARL REINHARDT FELLOWSHIP
Established from the estate of the late Carl Reinhardt, who received Bachelor of Applied Science degrees from McGill University in Civil Engineering (1896) and Mining Engineering (1897).
Eligibility: Open to graduate students in the Departments of Physics, as well as Earth and Planetary Sciences. No citizenship restrictions.
Value: Varies.
CARL REINHARDT SCHOLARSHIPS AND BURSARIES IN PHYSICS AND EARTH AND PLANETARY SCIENCES
Established from the estate of the late Carl Reinhardt.
Eligibility: To be used for scholarships or bursaries or in the support of research for graduate students in Physics, and Earth and Planetary Sciences. Awards are made by the Chair of the department concerned.
Value: Varies.

CHALK-ROWLES FELLOWSHIP
Established by Mary Laura Chalk, McGill’s first woman Ph.D. in Physics (1928), in memory of her husband, William Rowles (Ph.D. 1928), Professor Emeritus of Agricultural Physics at Macdonald College.
Eligibility: Open to graduate students in the Department of Physics. No citizenship restrictions.
Value: $10,000; renewable once.

DR. AND MRS. MILTON LEONG FELLOWSHIPS IN SCIENCE 梁家康醫生夫婦自然科學獎學金
Eligibility: Awarded by GPS to outstanding graduate students in the Faculty of Science, with preference to students from China.
Estimated value: $25,000; renewable once.

DR. AND MRS. MILTON LEONG GRADUATE STUDENT AWARDS 梁家康醫生夫婦研究生獎學金
Established in 2006 by Dr. and Mrs. Milton Leong to allow McGill University to attract and retain top students in its Faculty of Science.
Eligibility: Awarded by GPS, upon the recommendation of the Faculty of Science, to graduate students who are accepted into or registered in a program in the Faculty of Science, and who have also been granted an external fellowship, such as NSERC or FQRNT.
Estimated value: $5,000, or at the discretion of the Dean of the Faculty of Science; non-renewable.

DR. JAMES E. GRIFFITHS AWARD IN MATERIAL SCIENCES
Established in 2001 by Dr. James E. Griffiths, Ph.D. 1959. Awarded by GPS upon recommendation of the Faculty of Science to an outstanding incoming graduate student pursuing studies and research in material sciences in the Faculty of Science. Preference will be given to students holding an FQRNT (FCAR) or NSERC fellowship.
Estimated value: $1,500.

LORNE TROTTER SCIENCE ACCELERATOR FELLOWSHIPS
Established in 2006 by Lorne Trottier, B.Eng. 1970, M.Eng. 1973, D.Sc. 2006. Awarded annually by GPS upon nomination by the Faculty of Science to attract outstanding students into the Faculty's graduate degree programs.
Eligibility: The Lorne Trottier Science Accelerator Fellowships will be awarded to meritorious students accepted into a graduate degree program within the Faculty of Science and are to be combined with funding received by applicants through external programs such as NSERC or FQRNT, as well as with funding received through other sources within the University.
Application: Awardees are selected on the basis of nominations by the Faculty of Science. Applicants must submit their application directly to departments by early January.
Value: Varies.

MARY LOUISE TAYLOR FELLOWSHIP
Eligibility: Awarded by GPS. The fellowships may be held by students registered in any graduate program in the Faculty of Science at McGill, with preference given to women. No citizenship restrictions.
Value: Varies.

MOLSON AND HILTON HART FELLOWSHIPS IN SCIENCE
Eligibility: Awarded by Graduate and Postdoctoral Studies upon the recommendation of the Faculty of Science to outstanding graduate students.
Value: Varies.

RICHARD H. TOMLINSON FELLOWSHIPS IN UNIVERSITY SCIENCE TEACHING
Established in 2003 by a generous gift from Dr. Richard H. Tomlinson, Ph.D. 1948. The awards are for outstanding graduate and postdoctoral students in the Faculty of Science and other faculties, who will be engaged in research in the teaching of science at the university level. Awarded by the Dean of Science on the basis of academic merit upon recommendation from the Director of the Tomlinson University Science Teaching Project.
Eligibility: Professors in the Faculty of Science and other faculties will nominate candidates to the Director of the Tomlinson University Science Teaching Project, who will forward recommendations to the Dean of Science.
Value: Minimum $17,500; renewable.
Application: For more detailed information, please send an email to: tomlinson.project@mcgill.ca with the words “University Science Teaching Fellowship” in the subject field.

TOMLINSON MASTER’S FELLOWSHIPS IN THE FACULTY OF SCIENCE
Established in 2000 through a very generous gift from Dr. Richard H. Tomlinson, Ph.D. 1948. Awarded annually by Graduate and Postdoctoral Studies to recruit outstanding students into Master’s and Doctoral degree programs. Tomlinson Fellows who accept a fellowship from an agency external to McGill will be entitled to one-half the full value of the Tomlinson Fellowship.
Eligibility: The Tomlinson Faculty of Science Master’s Fellowships are for new students accepted into a Master’s program in a department within the Faculty of Science.
Value: $15,000; renewable annually based on satisfactory progress, to a maximum tenure of 2 years for Master’s level.

WOMEN IN SCIENCE FELLOWSHIP
Established in 2007 by Tania Zoukin, alumni, friends, faculty, students and staff of the Faculty of Science. Awarded by Graduate and Postdoctoral Studies, on recommendation of the Faculty of Science, to an outstanding student entering any graduate degree program in science. Preference will be given to female candidates.
Estimated value: $15,000; renewable once at the Master’s level and twice at the Doctoral level.

5.12.1 Atmospheric and Oceanic Sciences

MAX DUNBAR AWARD IN OCEANOGRAPHY
Established in 1985 and derived from contributions from former students of Prof. M.J. Dunbar in recognition of his teaching and research career at McGill. Awarded by the Department of Atmospheric and Oceanic Sciences to a student in any marine field of study with an outstanding academic record.
Value: Varies.
5.12.2 Biology

ARTHUR WILLEY MEMORIAL FELLOWSHIPS
Eligibility: New applicants to the M.Sc. or Ph.D. program; to be awarded on the recommendation of the Biology Department.
Value: $2,500; non-renewable.
Application: An application for admission must be received in the Biology Department prior to March 1.

PHILIP CARPENTER FELLOWSHIP IN BIOLOGY
Established in 1892 by Mrs. Philip P. Carpenter to provide “a post-graduate teaching fellowship or scholarship in Natural Science or some branch thereof.”
Eligibility: New applicants to the M.Sc. or Ph.D. program; to be awarded on the recommendation of the Biology Department.
Value: Two awards of $2,000 each per year.
Application: An application for admission must be received in the Biology Department prior to March 1.

VINEBERG FAMILY FELLOWSHIP
Established in 1990 by the family of Gertrude Vineberg to support research on environmental quality.
Eligibility: Awarded by GPS on the recommendation of the Executive Committee of the Limnology Research Centre to an outstanding student pursuing graduate studies and research on fresh water pollution, conservation and rehabilitation.
Value: $8,000; non-renewable.

5.12.3 Chemistry

CANADIAN SOCIETY FOR CHEMISTRY - MONTREAL - 2001 GRADUATE AWARD
Established in 2002 by the organizing committee of the CSC-Montreal 2001 conference to recognize excellence and distinguished academic standing by students in the Department of Chemistry.
Eligibility: Awarded by the Department of Chemistry to one or more outstanding graduate students to support expenses related to the presentation of a paper or papers at a major national or international conference.
Value: Minimum $1,000.

CARL A. WINKLER AWARD IN CHEMISTRY
Made possible by the donations of his graduate students, colleagues, friends, and a matching gift by Polysar Limited.
Eligibility: Given annually to the Ph.D. candidate who, upon graduating, is judged to be of outstanding academic excellence.
Estimated value: $1,000.
Application: No applications necessary. Awarded by the Chemistry Department.

COLL MCFEE MEMORIAL SCHOLARSHIP
Established in 1968 from a bequest of the late Miss Julia Beatrice Anderson McFee in honour of her father, Coll McFee, and her brother, Malcolm Charles Coll McFee, B.A. 1905, B.Sc. 1908, M.Sc.
Eligibility: To a student proceeding to the M.Ed. (Secondary Education) degree in Chemistry or a graduate of the McGill Chemistry Department who is proceeding to a M.Sc. or Ph.D. degree.
Value: Varies.
5.12.4 Computer Science

ANDRÉ COURTEMANCHE FELLOWSHIP FOR EXCELLENCE IN COMPUTER SCIENCE
Established in 2003 by André Courtemanche, B.Sc. 1985, M.Sc. 1987, for an outstanding graduate student who will be pursuing the first or second year of a Master's degree in Computer Science in the Faculty of Science. Awarded by Graduate and Postdoctoral Studies upon the recommendation of the School of Computer Science on the basis of merit.
Value: $10,000; renewable once for first-year students.

ANDRÉ COURTEMANCHE FELLOWSHIPS IN BIOINFORMATICS
Established in 2004 by André Courtemanche, B.Sc. 1985, M.Sc. 1987, for outstanding graduate students in the Faculty of Science's School of Computer Science, who are pursuing their Doctorate or Master's degree in the field of Computer Science, and conducting research in bioinformatics.
Eligibility: Awarded on the basis of academic merit by Graduate and Postdoctoral Studies on the recommendation of the School of Computer Science, with a preference for newly admitted NSERC or FQRNT fellowship recipients, or alternatively, international students with upper first class or equivalent standing.
Value: $6,250; renewable for an additional year.

5.12.5 Earth and Planetary Sciences

ALEXANDER A. MCGREGOR FELLOWSHIP IN EARTH AND PLANETARY SCIENCES
Established by Mr. Alexander A. McGregor, B.Sc. 1948.
Eligibility: Awarded on recommendation of the Department of Earth and Planetary Sciences to an outstanding research student in any field of the earth sciences.
Value: $12,500.

DAVID HARRIGAN MEMORIAL PRIZE
Eligibility: Awarded by the Faculty of Science Scholarships Committee on the recommendation of the Department of Earth and Planetary Sciences to a student with high standing in the M.Sc. (Applied) course, or to a graduate or undergraduate student with an interest in geochemistry.
Value: $800.

GERALDINE ELIZABETH DAVIDSON FELLOWSHIP
Eligibility: Established in 1989 by a bequest from Geraldine E. Davidson to support students with good academic standing and financial need registered in Graduate Studies and studying towards a higher degree in the field of earth and planetary sciences. Awarded by the Department of Earth and Planetary Sciences.
Value: $6,000.

J.B. LYNCH FELLOWSHIP IN EARTH AND PLANETARY SCIENCES
Value: $15,000.

LEROY MEMORIAL FELLOWSHIPS IN EARTH AND PLANETARY SCIENCES
Established by friends of Captain O.E. LeRoy, Arts 1895, who was killed at Passchendale in October 1917.
Eligibility: May be awarded annually to a student who desires to proceed with postgraduate studies in Earth and Planetary Sciences at McGill.
Value: $7,000.

WILLIAM HENRY HOWARD SCHOLARSHIPS
Bequeathed in 1955 by the late Mrs. Florence P. Howard in memory of her husband.
Eligibility: Open to undergraduate and graduate students in Earth and Planetary Sciences.
Value: Two scholarships of $2,500 each.

5.12.6 Geography

JOHN BRADBURY AWARD IN GEOGRAPHY
Established in memory of John Bradbury, remembered as one who inspired students and colleagues alike with his enthusiasm for understanding the world, and his commitment to improving the working conditions of ordinary people.
Eligibility: Awarded annually to a Master's student in Geography, alternately from McGill (even-numbered years) and Simon Fraser (odd-numbered years), whose thesis topic is related to John Bradbury's research interest in the economic geography of Canadian resource towns and international development, especially economic and social problems of resource town planning, economic restructuring, housing, class conflict and gender and work.
Value: $1,000.
Application: Awarded by the Department of Geography.

WARREN FELLOWSHIPS IN GEOGRAPHIC INFORMATION SYSTEMS
Established by Roger Warren, B.Com. 1955, to graduate students with strong academic standing whose research is in geographic information systems. Awarded to one or more students by GPS upon the recommendation of the Department of Geography.
Value: Minimum $5,000; renewable.

5.12.7 Mathematics and Statistics

ALEXIS D. AND W. CHARLES PELLETIER FELLOWSHIPS IN MATHEMATICS
Established in 2008 by A. David Pelletier, B.Sc. 1972, in honour of his grandfather, Alexis D. Pelletier, M.A. 1907, and father, W. Charles Pelletier, B.A. 1949, for outstanding students conducting doctoral research in Mathematics in the Faculty of Science. Awarded by Graduate and Postdoctoral Studies upon recommendation of the Faculty of Science's Department of Mathematics and Statistics.
Value: Varies.

5.12.8 Physics

DOW-HICKSON FELLOWSHIP IN PHYSICS
Endowed by the late Professor J.W.A. Hickson.
Eligibility: Awarded to a graduate student of any approved university proceeding to a higher degree in any branch of physics at McGill, or by a McGill graduate pursuing such studies elsewhere.
Value: Two fellowships of $6,500 each.
Application: Current graduate students apply to the Chair, Department of Physics.

5.12.9 Psychology

JUDITH MAPPIN FELLOWSHIP IN WOMEN'S HEALTH
Established in 2002 by Judith Mappin, B.Sc. 1950, for an outstanding graduate student in the Faculty of Science's Department of Psychology pursuing research in Women's Health.
Eligibility: Awarded by the Department of Psychology upon the basis of academic merit.
Value: Minimum $20,000; renewable.
6 Student Financial Assistance

6.1 Government Student Aid

6.1.1 Citizens and Permanent Residents of Canada

Need-based student financial aid programs are offered by the federal and provincial governments. Applications should be directed directly to the province (or territory) of residence. Application forms are available from the governmental authorities as well as the Student Aid Office. Information on governmental student aid and links can be found on McGill’s Financial Aid website at www.mcgill.ca/studentaid.

6.1.2 Citizens and Permanent Residents of the United States


6.2 McGill Student Aid

The Student Aid Office administers the University’s need-based financial aid programs which includes short- and long-term loans, bursary assistance and a Work-Study program. All applicants for aid must first apply for the maximum government assistance for which they may be eligible. A limited number of small bursaries are awarded on the basis of financial need and academic standing. In addition, the University provides the Student Aid Office with funds to help graduate students in need to complete their programs.

Applications are available on the Financial Aid Menu on Minerva. Student Aid Office Brown Student Services Building 3600 McTavish Street Montreal, Quebec, H3A 1Y2 Telephone: 514-398-6013 ext. 6014 Email: student.aid@mcgill.ca Website: www.mcgill.ca/studentaid

CAROLINE AND RICHARD RENAUD BURSARIES

Endowed in 1999 with a generous gift from Carolyn and Richard Renaud.

Eligibility: Awarded on the basis of financial need by the Student Aid Office to students entering or enrolled in graduate studies at McGill with a preference to students in programs in the Graduate School of Library and Information Studies.

GEORGES, PAUL AND ROBERT MASSON BURSARIES IN SCIENCE


Eligibility: Awarded to one or more students in good academic standing, enrolled in a graduate or undergraduate degree program in any department in the Faculty of Science. Preference shall be given to students in the departments of Biology and Mathematics. Awarded by the Student Aid Office on the basis of financial need.

GOLDMAN FEINGLOS MEMORIAL ENTRANCE BURSARY

Established in 2008 by Mrs. Beryl Goldman, and the estate of Ralph Goldman in memory of their daughter, Susan Goldman Feinglos, B.A. 1970, M.L.S. 1972. Awarded by the Scholarships and Student Aid Office to a full-time graduate student entering the Master of Library and Information Studies program on the basis of demonstrated financial need and academic achievement.

GRADUATE STUDENTS’ LOAN FUND

Established in 1951 by the Board of Governors for students in Graduate Studies.

IRVING ORRIN VINCENT BURSARY

Established by Mrs. J.B. Owen in memory of her father, the late Irving Orrin Vincent, B.A. 1907, M.A. 1908, a noted teacher and Principal of Edward VII School in Montreal from 1912 until his death in 1920.

Eligibility: Awarded annually by the Student Aid Office on the basis of academic merit and financial need to a graduating student in the Faculty of Arts proceeding towards an M.A., M.Ed., or Doctorate in Classics or Education.

JENNIE AND JOSEPH SALOMON MEMORIAL BURSARY

Eligibility: Established by the children of Mr. and Mrs. J. Salomon in their memory. Awarded to a deserving student in need who has completed the final undergraduate year in the Faculty of Arts or Science, and is entering a graduate program. Tenable for one year.

SYRA DEENA TARSISH FLEISHMAN BURSARY

Founded in 1966 by the National Council of Jewish Women in memory of a former student of the School of Library Science.

7 Postdoctoral Fellowships

In accordance with McGill University’s Guidelines for Academic Units on Postdoctoral Education (Senate, April 2000), all internal and external postdoctoral fellowships with a value lower than the minimum financial support stipulated in the guidelines will be supplemented from sources other than the individual’s personal means, including faculty or departmental funds, research grants or contracts or other allowable funds.

The guidelines stipulate that a postdoc must be assured of financial support, other than from personal means, during his/her stay in the University equivalent at the time of appointment to at least 90 per cent of the lesser of either the federal (NSERC, SSHRC or CIHR) or the provincial (FQRNT, FRQSC or FQRSC) research council postdoctoral fellowship pertinent to his/her discipline.

With regards to the value of the council fellowships, the minimum funding level in each disciplinary area in 2009-10 is:

- Natural Sciences and Humanities: $27,000
- Social Sciences and Engineering: $27,000
- Medical and Health Sciences: $27,000

Individuals seeking postdoctoral funding in medical sciences may wish to contact the Research and Graduate Studies Office, McGill Faculty of Medicine, 6th floor, McIntyre Medical Building, 3655 Promenade Sir William Osler, which often receives postdoctoral funding information directly from external agencies.

An informal information site on postdoctoral fellowships and employment in the Sciences and Health Sciences has been compiled by the Association Bernard Gregory in France at www.abg.asso.fr under “L’emploi sur Internet”. It provides links with various relevant sites.

COS Database: McGill University subscribes to the COS database for sources of research funding. Please refer to section 2.2, “Further Information”.

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7.1 Internal Postdoctoral Fellowships

**AMY WONG FELLOWSHIP**

Established in 1998 by a generous gift from a McGill graduate of Chemical Engineering (Class of 1959) from Hong Kong.

** Eligibility:** Awarded to a qualified student from China, including Hong Kong, who is an entering postdoctoral scholar, Ph.D. or M.Sc. student conducting agricultural production/food related research in the Faculty of Agricultural and Environmental Sciences. Awarded by the Dean of the Faculty in consultation with the departments. The recipients are expected to return to their home country after the completion of their studies.

**Estimated value:** Minimum $20,000; renewable once at the Master’s level and twice at the Doctoral or Postdoctoral levels.

**CHARLES E. FROSTT/MERCK FELLOWSHIP IN PHARMACOLOGY**

Established in 2007 by Dr. Alan C. Frostt and Merck Frostt Canada Ltd. To support research and scholarship in the area of aging and neuro-degeneration under the supervision of the Charles E. Frostt-Merck Chair in Pharmacology.

**Eligibility:** Awarded to a qualified student from China, including Hong Kong, who is an entering postdoctoral scholar, Ph.D. or M.Sc. student conducting agricultural production/food related research in the Faculty of Agricultural and Environmental Sciences. Awarded by the Dean of the Faculty in consultation with the departments. The recipients are expected to return to their home country after the completion of their studies.

**Estimated value:** Minimum $20,000; renewable once at the Master’s level and twice at the Doctoral or Postdoctoral levels.

**THE COLE FOUNDATION FELLOWSHIPS IN MEDICINE**

Established by The Cole Foundation in 2006 to fund fellowships for postdoctoral research in pre-leukemia, leukemia and other cancer-related diseases within the McGill University Faculty of Medicine or its affiliated hospitals.

**Eligibility:** Eligible areas include fundamental, translational, clinical and population-based research, with an emphasis on children and young adults. Two-year Fellowships will be awarded by the Postgraduate Awards Committee of the Faculty of Medicine, the second year of funding being contingent on a favourable mid-term evaluation.

**Value:** Minimum $20,000, plus travel expenses; renewable once.

**CONRAD F. HARRINGTON POSTDOCTORAL FELLOWSHIPS**

Established in 1999 in honour of Conrad F. Harrington in recognition of his leadership in developing in McGill University Health Centre.

**Eligibility:** The postdoctoral fellowship in the area of amyotrophic lateral sclerosis (ALS) will support researchers who have received their M.D. or Ph.D. degrees and who wish to advance their research careers in the Faculty of Medicine in the McGill University Health Centre. In the event that there are no candidates investigating ALS, the fellowship will be awarded to support a postdoctoral candidate working in a related area of neurological disease. Awarded by the Postgraduate Award Committee of the Faculty of Medicine.

**Value:** $17,000.

**MCLAUGHLIN FELLOWSHIP**

Awarded by The Cole Foundation in 2006 to fund fellowships for postdoctoral research in pre-leukemia, leukemia and other cancer-related diseases within the McGill University Faculty of Medicine or its affiliated hospitals.

**Eligibility:** Awarded to a qualified student from China, including Hong Kong, who is an entering postdoctoral scholar, Ph.D. or M.Sc. student conducting agricultural production/food related research in the Faculty of Agricultural and Environmental Sciences. Awarded by the Dean of the Faculty in consultation with the departments. The recipients are expected to return to their home country after the completion of their studies.

**Estimated value:** Minimum $20,000; renewable once at the Master’s level and twice at the Doctoral or Postdoctoral levels.

**MCLENNAN FELLOWSHIP**

Awarded by The Cole Foundation in 2006 to fund fellowships for postdoctoral research in pre-leukemia, leukemia and other cancer-related diseases within the McGill University Faculty of Medicine or its affiliated hospitals.

**Eligibility:** Awarded to a qualified student from China, including Hong Kong, who is an entering postdoctoral scholar, Ph.D. or M.Sc. student conducting agricultural production/food related research in the Faculty of Agricultural and Environmental Sciences. Awarded by the Dean of the Faculty in consultation with the departments. The recipients are expected to return to their home country after the completion of their studies.

**Estimated value:** Minimum $20,000; renewable once at the Master’s level and twice at the Doctoral or Postdoctoral levels.

**Peter Quinlan Fellowship**

To honour the memory of Peter Quinlan, a fellowship fund has been established in his name by his family and friends.

**Eligibility:** The Peter Quinlan Fellowship will support young researchers (M.D. or Ph.D.) who wish to undertake postdoctoral training in Oncology at McGill University and its affiliated hospitals. The Scholarship will be awarded to support a postdoctoral candidate working in a related area of neurological disease. Awarded by the Postgraduate Award Committee of the Faculty of Medicine.

**Value:** Stipend will follow CIHR Salary Scale.

**DR. DAVID T.W. LIN FELLOWSHIP**

Established in 1998 by a generous gift from a McGill graduate of Chemical Engineering (Class of 1959), from Hong Kong, in recognition of Dr. David T.W. Lin, B.Sc. 1937, M.D.,C.M. 1940, a surgeon emeritus at the Royal Victoria Hospital, to support medical research.

**Eligibility:** Awarded by the Postgraduate Awards Committee of the Faculty of Medicine to a student at the Postdoctoral, Ph.D. or M.Sc. level.

**Value:** Minimum $20,000.

**Application:** Further information can be obtained from www.medicine.mcgill.ca/research or by contacting the Research Office of the Faculty of Medicine.
Application: Further information can be obtained from www.medicine.mcgill.ca/research or by contacting the Research Office of the Faculty of Medicine.

RICHARD AND EDITH STRAUSS FELLOWSHIPS IN MEDICINE
Established in 2008 by the Richard and Edith Strauss Canada Foundation to fund fellowships for postdoctoral research in the areas of stem cell and regenerative medicine and chronic disease and aging.
Eligibility: Awarded by the Post Graduate Awards Committee of the Faculty of Medicine to outstanding Postdoctoral Fellows or Postdoctoral Trainees, as defined by McGill University.
Value: $25,000; possibly renewable once.

RICHARD H. TOMLINSON POSTDOCTORAL FELLOWSHIPS
Established in 2000 through a very generous gift from Dr. Richard H. Tomlinson, Ph.D. 1948. Awarded annually by GPS to recruit outstanding individuals into postdoctoral positions in any department at McGill University. Tomlinson Fellows who accept a fellowship from an agency external to McGill will be entitled to one-half the full value of the Tomlinson Fellowship.
Eligibility: The Tomlinson Postdoctoral Fellowships are for new postdoctoral scholars accepted into a postdoctoral research position at any department at McGill University.
Value: $30,000; renewable annually based on satisfactory progress, to a maximum tenure of two years for Postdoctoral level.
Deadline: December 1.
Application: Applications for a Tomlinson Postdoctoral Fellowship must reach the intended department by December 1 and should be accompanied by a letter from a McGill faculty member indicating their willingness to supervise the applicant’s postdoctoral research in the event a fellowship is awarded. Current doctoral students and postdoctoral scholars at McGill are not eligible to apply. See www.mcgill.ca/gps/postdocs.

SUSTAINABLE AGRICULTURE FELLOWSHIP
Established in 1995 through an endowment by the Macdonald Farm Management and Technology Program, to foster innovative research in sustainable development that might not otherwise find support through traditional funding sources.
Eligibility: The proposed research would address themes such as food systems, agriculture, conservation, and the environment; sustainable systems and the community; issues in Canada’s North; and food, nutrition and community development. Awarded by the Faculty of Agricultural and Environmental Sciences Scholarship Committee on the basis of academic merit and suitability of the proposed research to the fellowship theme. Priority will be given to postdoctoral fellows.
Value: $35,000 at the Postdoctoral level; may be renewable once.
Deadline: February 1, to Scholarships Committee for a fellowship commencing September 1.
Application: Additional information is available from the Macdonald Campus Student Affairs Office, 21,111 Lakeshore, Ste-Anne-de-Bellevue, Quebec, H9X 3V9. Doctoral candidates will be considered in the second round if no suitable postdoctoral candidate is found.

7.2 External Postdoctoral Fellowships
Please refer to section 3, “External Fellowships” for information on postdoctoral opportunities.

8 Exchange and Travelling Fellowships
Information on funding opportunities for graduate study and research outside of Canada is contained in many of the reference books and directories listed in section 2.2, “Further Information”. One of the most comprehensive publications is UNESCO’s “Study Abroad”, available for consultation at Graduate and Postdoctoral Studies, Fellowships and Awards Section, the McLennan Library and many national libraries around the world. Embassies, consulates and commissions of foreign countries located in Canada also are excellent sources of information on funding opportunities for students intending to study abroad.
Addresses and telephone numbers of all diplomatic representatives in Canada can be obtained from the Department of External Affairs in Ottawa at 613-996-4376. For McGill students seeking funding for graduate study outside Canada, the graduate awards offices of foreign universities themselves are often the best source of information. The McLennan Library has a vast collection of foreign university catalogues. The French embassy in Ottawa has a complete website on France-Canada exchange programs at http://ambafrance-ca.org.

McGill University has signed a number of agreements with universities in other countries, many of which include a student exchange component. As a member of the Conference of Rectors and Principals of Quebec Universities (CREPUQ), McGill also participates in a number of student exchange programs with designated universities in the United States and Europe. Further information on such programs may be obtained from the Student Exchange Officer, Enrolment Services, James Administration Building, Room 205; McGill University; Telephone: 514-398-8342.

COS Database: McGill University subscribes to the COS database for sources of research funding. Please refer to section 2.2, “Further Information”.

BOURSE PAUL BLANC
Offered alternately each year to a Canadian student from McGill or the Université de Montréal for graduate study at the Université de Lausanne, Switzerland and to a Swiss student from the Université de Lausanne for postgraduate study in Montreal. All things being equal, the fellowship will be offered to a student in science. Research subsidies are also available.
Value: 15,000 Swiss francs, annually (approximately $12,500 Canadian).
Deadline: January 31.
Société académique Vaudoise, 1, avenue de Montbenon, case postale 7490, 1002 Lausanne, Switzerland.
Email: secretariat@S-A-V.org

ASSOCIATION OF UNIVERSITIES AND COLLEGES OF CANADA (AUCC)
AUCC administers several fellowship competitions and exchanges for graduate study. In most cases, candidates must be Canadian citizens or permanent residents of Canada for at least one year prior to application. Information concerning eligibility, tenure, as well as application forms available from the Canadian Awards program, Awards Division, Association of Universities and Colleges (AUCC), 350 Albert Street, Suite 600, Ottawa, Ontario, K1R 1B1. Telephone: 613-563-1236; www.aucc.ca.

BRITISH CHEVENING SCHOLARSHIPS
Eligibility: For Canadians studying at a university in the U.K. Scholarships last up to one year and are typically granted for Master’s degree courses. It is highly unusual for the committee to approve an award for Ph.D. studies. It is open to candidates in the following fields of study: Political Science, Law and International Relations, Media, Economics and International Development.
Value: Most awards will cover only university tuition fees, which vary according to the institution. In these cases, living costs and international airfares are not included. In exceptional circumstances the committee may award a full scholarship.
Deadline: January 15.
CAMBRIDGE CANADIAN TRUST – GRADUATE SCHOLARSHIPS
The Cambridge Canadian Trust offers a number of scholarships each year to Canadian graduates for graduate study at the University of Cambridge. These include: Ph.D. scholarships (Canada Cambridge Scholarships, First Canadian Donner Foundation Research Cambridge Scholarships, Kenneth Sutherland Memorial Cambridge Scholarship, UK Commonwealth (Cambridge) Scholarships, William & Margaret Brown Cambridge Scholarship, Tidmarsh Cambridge Scholarship), graduate Law scholarships (CIALS Cambridge Scholarships, Pegasus Cambridge Scholarships), and scholarships for one-year postgraduate courses of study (UK Commonwealth (Cambridge) Scholarships). The Cambridge site reminds incoming Canadian Ph.D. students to also apply for the ORS (Overseas Research Student awards), which pay the difference between Home and Overseas fees.

Eligibility: Canadian citizens for graduate study in various fields at Cambridge University.

Value: Scholarships cover tuition fees and/or airfare and/or a living allowance.

Deadlines: Vary depending on programme, but to be eligible for the ORS, completed academic applications must reach the university by early December (check for dates).

Application: For more information, see the Cambridge University graduate funding site for Canadians: www.admin.cam.ac.uk/univ/gradprospectus/funding/overseas. The Cambridge home page is www.admin.cam.ac.uk. Information regarding specific application requirements and application forms are available from the British Council, 80 Elgin Street, Ottawa, Ontario, K1P 5V7; telephone: 613-364-6236; or the University of Cambridge, Board of Graduate Studies, 4 Mill Lane, Cambridge CB2 1RZ, U.K.; email: feesandfunding@gradstudies.cam.ac.uk

CANADA-UNITED STATES FULBRIGHT SCHOLARSHIPS FOR GRADUATE STUDENTS
Proposed projects must comply with the Canada-U.S. Fulbright Program goal of broadening research efforts in the wide range of subjects pertaining to the relationship between Canada and the United States.

Eligibility: Canadian or American citizen with student status.

Graduate students must be already accepted at a university in the host country. If a student has a proposed research project for a duration of nine months that cannot be conducted in the host country, then the student can receive funding, provided he/she is enrolled at a university in his/her home country.

Value: Fulbright scholarships are granted for periods of nine months. The award is a fixed sum US$15,000 for one nine-month academic year beginning in September. Grantees are expected to use the award to cover necessary expenses such as housing, travel, school fees and other academic expenditures. Basic health insurance is also provided, along with visa services.

Deadline: November 15 for Canadian applicants, October 20 for Americans.

Application: Forms for Canadian students available at www.fulbright.ca. The Canada US Fulbright Program, 350 Albert Street, Ste. 2015, Ottawa, Ontario, K1R 1A4. Telephone: 613-237-2029 Email: info@fulbright.ca Website: www.fulbright.ca


CANADIAN BUREAU FOR INTERNATIONAL EDUCATION (CBIE) SCHOLARSHIPS
Eligibility: The CBIE offers a number of support programs that target international development issues, both for Canadians and international students. Scholarship, internship and professional development opportunities are available. The programs supported by the CBIE are: CBIE Grants, CETA Africa, Bombardier Fellowship (see entry in this section under J. Armand Bombardier Internationalist Fellowships), Lucent Global Science Youth Scholars, and the Youth Internship Program. The CIDA Awards Program for Canadians, formerly administered by the CBIE on behalf of the Canadian International Development Agency, ended on March 31, 2004. No further competitions are anticipated.

Value: Varies depending on the program.

Deadline: Varies, depending on the program.

Application: See the Scholarships page on the CBIE website at: www.cbie.ca/english/scholarship.

The CBIE home page is www.cbie.ca and is navigable in French or English.

Canadian Bureau for International Education, 220 Laurier Ave. West, Suite 1550, Ottawa, Ontario, K1P 5Z9, Canada; telephone: 613-237-4820; fax: 613-237-1073; email: info@cbie.ca

COMMANDER C. BELLAIRS GRADUATE FELLOWSHIPS
Eligibility: Tenable at the Bellairs Research Institute of McGill University, St. James, Barbados (specializing in marine biology, marine ecology, geography, geology, behavioural ecology and other fields). Candidates should be registered full-time in graduate studies at McGill and may apply at any point in their research program for a fellowship to allow them to work at Bellairs.

Value: Up to $10,000 per year, plus travel expense for graduate level, and up to $20,000 per year for Postdoctoral level.

Deadline: Check availability with the GPS Fellowships and Awards Section.

Application: The fellowship is not being offered until further notice.

COMMONWEALTH SCHOLARSHIPS FOR GRADUATE STUDIES
(Program currently under review by the Department of Foreign Affairs and International Trade Canada.)

Eligibility: The Commonwealth countries of India, Jamaica, Malta, New Zealand, Nigeria, Trinidad & Tobago, and the United Kingdom offer scholarships to Canadian citizens and, in certain cases, to permanent residents of Canada, for graduate studies (Master’s or Ph.D.) or, in some countries, for research toward a Canadian graduate degree. The list of countries may change - see the website listed below for further details. Canadian citizens are eligible to apply for all programs. The Canadian Scholarship Selection Committee will only consider permanent residents of Canada who are graduates of a Canadian university. Permanent residents of the awarding country are not eligible. See the website for further eligibility restrictions and also restrictions specific to the host country where study is to be undertaken.

Value: Awards normally cover airfare, tuition, a living allowance and, in certain cases, expenses related to medical coverage and the purchase of books. Awards usually have a duration of one year (Master’s) or three years (Ph.D.), though there may be exceptions.

Deadline: Deadlines depend on the duration of the academic year in host countries. As the list of countries is subject to change, the deadlines will be variable from year to year as well. It is suggested that the website be monitored on a regular basis by interested applicants.

Application: Information and application forms are available at: www.scholarships.gc.ca. The GPS site can also be consulted: www.mcgill.ca/gps.

DEUTSCHER AKADEMISCHER AUSTAUSCHDIENST (DAAD) – GERMANY ACADEMIC EXCHANGE FELLOWSHIPS
The German Academic Exchange Service (DAAD) offers scholarships to highly-qualified students for graduate study and/or research at universities or institutes in Germany.

Eligibility: McGill students may be eligible to apply for DAAD fellowships under two distinct programs: McGill/DAAD and Bourses Québec-Allemagne, run by MELS. DAAD Fellowships (Annual Grants) are open to graduating seniors, graduate students and Ph.D. candidates under 33 years of age, enrolled full-time at time of application. Applicants must have a well-defined research project that makes a stay in Germany well-defined.
FOREIGN GOVERNMENT AWARDS
The Foreign Government Awards are intended to assist Canadian students in furthering their studies or conducting research abroad at the Master’s, Doctoral or Postdoctoral level. As part of the implementation of cultural agreements with the Government of Canada, the governments of Chile, Colombia, Germany, Korea, Mexico, the Philippines, and Russia will offer awards to Canadian graduate students. However, the embassies of these countries in Canada are responsible for the administration of their scholarships.

Eligibility: A common condition is that the applicant be a Canadian citizen and have completed a first degree.

Value: Although all of the awards are similar in nature, the value of each award is determined by the offering country. Most awards cover travel to and from the host country, tuition and registration fees, and a monthly living allowance. Several awards also cover books, mandatory health and accident insurance and various other allowances.

Deadline: Deadlines for submission of applications vary depending on whether the competitions are administered by the CBIE or by each of the Embassies in Canada. Please also note that the forms provided on the website can only be used for those competitions administered by the CBIE. Forms for those competitions directly administered by the Embassies in Canada of participating countries must be obtained from the relevant Embassy or Consulate. See the website for Embassy contact information. For more information on deadlines and submission information: www.scholarships.gc.ca.

Application: Applications and further information are available at: www.scholarships.gc.ca.

GOVERNMENT OF ITALY SCHOLARSHIPS
Eligibility: The Government of Italy offers scholarships to Canadian citizens wishing to pursue studies in Italy. They are intended for students, professionals, teachers, and artists who meet the necessary requirements for enrolment in Italian post-secondary institutions (universities, academies, conservatories, art restoration institutes, National School of Cinematography, research centres or laboratories, libraries, archives, museums and other national or nationally-recognized institutions), and who would like to attend specialized courses or conduct research in specific fields. Italian language and culture courses at public post-secondary institutions in any area of study, except for medical. All courses of study must be undertaken at Government approved educational institutions. Applicants for the long-term scholarships interested in undergraduate research or study must possess a high school diploma entitling the applicant to enrol in university; for those wishing to study or conduct research at the post-graduate level, the minimum requirement is a Master’s degree. Applicants must be 35 years of age or younger.

Value: Monthly stipend of 700 Euros. Scholarships offered by the Italian Government do not include airfare and room and board. Please note that scholarship recipients must make their own travel and lodging arrangements.

Deadline: Check website.

Application: See the Italian Embassy website: www.ambottawa.esteri.it. Guidelines for application, program description and further information are available in English, French or Italian. The Italian Consulate in Montreal is located at 3489 Drummond Street, Montreal, Quebec, H3G 1X6. Telephone: 514-849-8351 Fax: 514-499-9471 Email: cgi@italconsul.montreal.qc.ca

GRADUATE RESEARCH ENHANCEMENT AND TRAVEL AWARDS (GREAT AWARDS)
Established in 2009 by Graduate and Postdoctoral Studies, using funds granted by the Provost, NSERC, SSHRC, royalties, and generous donations through the Alma Mater fund and endowed funds to support research travel and dissemination of research, including, but not limited to: conference presentations (and equivalent dissemination activities in research-creation disciplines, such as Music); field research; archival research; collaborative research outside the university. Awarded by Graduate and Postdoctoral Studies upon the recommendation of Faculties.

Eligibility: All graduate students registered full time in Research Master’s programs, years 1 and 2, or in Doctoral programs, years 1 to 5.

Value: Varies.

GRADUATE STUDENT RESEARCH SUPPORT IN THE SOCIAL SCIENCES AND HUMANITIES
Eligibility: Limited funds are available from the Office of the Vice-Principal (Research) for the support of graduate student research in the social sciences and humanities. This may include thesis research conducted at a site remote from McGill. This program will not cover typing or reproduction of theses, equipment, computer time and supplies.

Value: Maximum $5,000.

Deadlines: April 17, October 17, January 16. (If deadline falls on a weekend or public holiday, the next working day applies.)

Application: Further details and application forms are available from McGill University, Research Grants Office, James Administration Building, Room 429. Telephone: 514-398-3790 Website: www.mcgill.ca/rgo/funding/internal

INTER AMERICAN DEVELOPMENT BANK (IDB) SCHOLARSHIPS
Eligibility: The IDB administers two scholarship programs: the Japan Scholarship Program for graduate students in development-related fields, and scholarships to attend social development courses offered by INDES. Candidates must be a national of one of IDB borrowing member countries. For the Japan Scholarship Program, candidates must hold a bachelor’s degree or its equivalent in the social sciences, business or...
public administration, or another development-related technical discipline, or an academic area, at least two years work experience in a development field, and be currently enrolled in a Master's degree program in the social sciences, business or public administration, or another development-related technical discipline (except law and medicine), in a university of a member country other than the country of origin or residence. Applicants must intend to return to their home country after completion of study and work for at least two years in order to apply enhanced knowledge and skills toward helping accelerate economic and social development.

The Japan-IDB Scholarship Program has the following three sub-programs: the Northern Hemisphere Program (at Universities located in the North America, Central America and Europe), the Southern Hemisphere Program (at Universities located in the South America countries), and the Special Program for Studies at Japanese Universities for students entering a Master's program, in English, at any university located in Japan.

Value: INDIES scholarships cover participation, required materials and texts, health and life insurance, a roundtrip airline ticket between the city of residence and Washington D.C., and lodging.

The Japan-IDB scholarship provides benefits covering full tuition, university medical and accident insurance, an installation allowance, a monthly subsistence allowance, a book allowance, and economy class travel. The scholarship is effective as of the start of the academic year and does not cover any expenses during the summer.

Deadline: Varies depending on scholarship and sub-program. See the website below for more details.

Application: Forms and additional information are available on the IDB's scholarship page: www.idadb.org/aboutus/Lscholarships.cfm?language=English. The Bank's home page is www.idadb.org and the site is navigable in English, French, Spanish or Portuguese.

Headquarters: Inter-American Development Bank, Japan-IDB Scholarship Program, 1300 New York Avenue, NW, Stop W-404, Washington, D.C. 20577, United States of America

INTERNATIONAL DEVELOPMENT RESEARCH CENTRE (IDRC) FELLOWSHIPS AND RESEARCH FUNDING

Eligibility: The IDRC administers a number of fellowships and funding opportunities for students conducting research in development-related disciplines. As there are several programs targeting several different areas, students are advised to consult the IDRC website (www.idrc.ca) to see if such funding opportunities are applicable to their research. As the programs are related to development, many support research abroad. Those included here support some form of research outside of Canada or are available to international students from developing countries. Programs available toCanadians and permanent residents, as well as those that are more topic-based and do not necessarily include travel and research abroad are listed above, and below the IDRC entry in the External Fellowships section (Section 3.6). Each of the programs supported by the IDRC is also available as targeted funding for students from developing countries. See the IDRC website for more details.

IDRC Doctoral Research Awards (IDRA) "Community Forestry: Trees and People - John G. Bene Fellowship"

"Use of Fertility Enhancing Food, Forage and Cover Crops in Sustainable Managed Agroecosystems: The Bentley Fellowship"

Value: Varies depending on the program.

Deadline: Varies depending on the program.

Application: Mailing address: P. O. Box 8500, Ottawa, Ontario, Canada, K1G 3H9; street address: 250 Albert Street, Ottawa, Ontario, Canada, K1P 6M1; telephone: 613-236-6163; fax: 613-236-7230; email: info@idrc.ca; website: www.idrc.ca.

INTERNATIONAL FEDERATION OF UNIVERSITY WOMEN (IFUW) INTERNATIONAL FELLOWSHIPS

Eligibility: The International Federation of University Women offers a limited number of fellowships and grants to women graduates for advanced research, study and training. The competitions are normally held every two years. Competitions are open to nationals of all countries who are members of the IFUW. Women graduates can become IFUW members by joining one of the federations or associations of university women affiliated to IFUW, such as the Canadian Federation of University Women, or by becoming an independent member, if they live in a country without an IFUW affiliate. Fellowships are meant to encourage advanced scholarship and original research by university women. Applicants must be well started on the research program to which the application refers. Fellowships are for eight to 12 months of work, and should be taken up within nine months of the date of award. They are not normally given for a Master's or for the first year of a Ph.D. program. Fellowships and grants are for work in any branch of learning, in the country of the applicant's choice. All candidates must have obtained admission to the proposed place of study prior to applying to IFUW's competition. An official letter of acceptance must accompany the application. The awards provide a maximum of 12 months support and are not renewable.

Value: Varies depending on the specific fellowship for which one applies.

Deadline: See agency website.

Application: Information regarding the different fellowships as well as specific application requirements and application forms are available on the IFUW's Fellowships and Grants page at: www.ifuw.org/fellowships/index.htm. The Federation's home page is www.ifuw.org; IFUW, 10 rue du Lac, CH-1207, Geneva, Switzerland. Telephone: (+41 22) 731-2380; email: info@ifuw.org.

Canadian Federation of University Women, 251 Bank Street, Suite 600, Ottawa, Ontario, K2P 1X3, Canada; telephone: 613-234-8252; fax: 613-234-8221; email: cfuw1@rogers.com

JAPAN FOUNDATION - JAPANESE STUDY FELLOWSHIP PROGRAM

Eligibility: The Japan Foundation offers three levels of support to Canadian citizens and permanent residents wishing to conduct research related to Japanese studies in Japan. Support is offered to scholars and researchers (between two and 12 months), Doctoral students (between four and 14 months), and to those seeking to do intensive, short-term research such as data collection and interviews in Japan (21 to 60 days). Proposals must be within the disciplines of the humanities and/or social sciences, and must be related in substantial part to Japan. Comparative research is acceptable. Proposals which do not fall within the scope of acceptable project areas, include: natural, medical or engineering sciences; undergraduate studies; Japanese-language studies and training in non-academic fields such as traditional culture, technology and commerce. In order to conduct research or pursue projects in Japan effectively, the cooperation of an affiliated institution or research associate is essential. Such affiliation must be demonstrated as part of the application (excluding Short-Term Researchers).

Value: 310,000 - 370,000 Japanese Yen monthly allowance, plus medical insurance, airfare, tuition fees and research allowance. Short-term researchers are entitled to airfare, a 17,000 Yen daily stipend and a 5,000 Yen daily research allowance.

Deadline: December 1, though applying earlier is encouraged.

Application: Residents of Ontario residing outside the National Capital Region should apply through The Japan Foundation, Toronto. Residents of the National Capital Region should apply through the Embassy of Japan, Ottawa. Applicants from provinces outside Ontario should contact the nearest diplomatic mission. More information about the programs is available on the Japan Foundation’s website at www.japanfoundationcanada.org. For application forms, see your local Japanese consulate (unless you live in Ontario, but not Ottawa).

The Japan Foundation Toronto Office, 131 Bloor Street West, Toronto, Ontario, MSS 1R1; telephone: 416-966-1600. The Consulate General of Japan, 600 de la Gauchetiére Street West, Suite 2120, Montreal, Quebec, H3B 4L8; telephone:
Eligibility: Scholarships in most disciplines are offered each year to Canadian citizens who wish to pursue their graduate studies in any subject in Japan. Candidates must be under 35 years of age, have a university degree and be willing to study the Japanese language.

Value: Travel and living allowances for up to two years are provided, plus tuition fees.

Deadline: Check with Consulate.

Application: Forms are available from the Consulate General of Japan, Monbusho Scholarships, 600 de la Gauchetière Street West, Suite 2120, Montreal, Quebec, H3B 4L8; telephone: 514-866-3429.

J. ARMAND BOMBARDIER INTERNATIONALIST FELLOWSHIPS

The J. Armand Bombardier Internationalist Fellowships Program is unique in responding to the need of Canadians to develop their international awareness, its openness to all countries and all disciplines, as well as its objective to increase Canada's participation in the world economy. Applicants to the program show promise of becoming Canada's leaders of tomorrow in their chosen field of endeavour.

Eligibility: Open to Canadians and permanent residents of Canada who hold at least one university degree, or are in the final year of a degree program. The latest degree must have been awarded no longer than five years from the date of application. Applicants must have achieved high academic standing.

Value: $10,000 per year.

Deadline: March 1 to CBIE. (Confirm with GPS Fellowships and Awards Section; the deadline may change in future competitions.)


M. C. MACDONALD TRAVELLING SCHOLARSHIP

Eligibility: Founded by the will of the late Sir William Macdonald, will be awarded by the Faculty of Law to one or more members of the graduating class, or of a recent class, with a distinguished academic record in the Faculty, to enable such student or students to pursue graduate studies in law. Preference is to be given to students who wish to pursue their graduate studies in a language other than their mother tongue, and preference is also to be given to students intending to study in a francophone institution. The income generated from this fund will be used to assist one or more students, and will be divided according to need, based on the expenses related to the programme in question.

MACKENZIE KING TRAVELLING SCHOLARSHIPS

Eligibility: Offered to a graduate of any Canadian university to engage in postgraduate studies in the U.S. or U.K. in international or industrial relations (including international or industrial aspects of law, history, politics, economics). Applicants should be persons of unusual worth and promise. Awards are based on academic achievement, personal qualities and demonstrated aptitudes, as well as proposed program of study. McGill only considers undergraduate applicants with First Class Honours standing (CGPA of 3.7 or higher) and graduate applicants with cumulative “straight A” records. Applicants to McGill who have graduated with a McGill undergraduate degree will automatically be considered for the Delta Upsilon and Peacock memorial scholarships.

Value: Approximately four scholarships per year of up to $10,000 each.

Deadline: Normally February 1 to applicant's home university. Verify McGill's deadline with the GPS Fellowships and Awards Section.

Application: Application is made through the “home” university, i.e., the Canadian university from which the applicant has or will receive the most recent degree. For further information and application forms, consult the agency website: www.mkinscholarships.ca. To verify the application process and other procedural details, consult the McGill Graduate and Postdoctoral Studies website: www.mcgill.ca/gps.

MINISTÈRE DE L’ÉDUCATION, DU LOISIR ET DU SPORT (MELS) - PROGRAMME DE Bourses des Gouvernements Étrangers

The MELS administers over 100 travelling fellowships created as a result of bilateral cooperation agreements in education and training between the Quebec government and foreign governments. These fellowships are offered to Canadian citizens and permanent residents of Canada who are residents of Quebec, to financially support study or research abroad, in the countries or provinces listed on the MELS website. (The list is updated from time to time.)

Eligibility: Candidates must be Canadian citizens or permanent residents and must have resided in Quebec for the past year at least. Candidates must possess an undergraduate degree and be registered in a Master’s or Doctoral level program at a Quebec university at the time that the fellowship is granted. Candidates must also conform to the specific requirements of the particular program through which a fellowship is being sought, and in most cases be fluent in the language of the country where studies will be undertaken. The type of study eligible and the value and duration of these fellowships varies depending on the particular agreement. Prospective applicants are strongly encouraged to carefully consult the MELS website listed below.

Value: Normally covers travel and living expenses, for between one and 12 months. Some fellowships may be renewable.

Deadline: Varies according to the program.

Application: Up-to-date information regarding specific application requirements is available at: www.mels.gouv.qc.ca/ens-sup/ens-univ/bourses.asp.

MOYSE TRAVELLING SCHOLARSHIPS

Eligibility: Founded by the late Right Honourable Lord Atholstan, to commemorate the "splendid services of Dr. Charles E. Moyse, for forty-two years Professor of English, during sixteen of which he was Dean of the Faculty of Arts and Vice-Principal of the University". Two one-year scholarships are awarded. One scholarship will be awarded by the Faculty of Arts and the other by the Faculty of Science. In the absence of applicants of sufficient merit in either of the faculties, applicants from final years in other undergraduate faculties, or from graduate students may be considered. Holders must devote the year of tenure to advanced study, preferably in a British or European university, but not to the exclusion of other institutions approved by the Faculty of Arts or of Science. Applicants must be available for interviews April 30 - May 4.

Value: Arts & Science - $11,000 each.

Deadline: April 2 at Office of Dean of Arts or Dean of Science.

Application: For Arts, see www.mcgill.ca/arts/awards; for Science, see: www.mcgill.ca/science/student/moyse. Further information on application procedures and forms are available from the Offices of the Deans of Arts and Science (see the Student Affairs Office at: Dawson Hall, Room 110, McGill University, 853 Sherbrooke Street West, Montreal, Quebec, H3A 2T6; telephone: 514-398-4210; fax: 514-398-7185).
ONTARIO-QUEBEC EXCHANGE FELLOWSHIPS
Eligibility: The Ontario-Quebec Exchange Fellowship Program allows students from Ontario to pursue full-time graduate studies at the Master's or Doctoral level at a university in Quebec. This program offers outstanding students from Ontario the opportunity to live and study in the cultural milieu of Quebec. The program is sponsored by the Ontario-Quebec Commission for Co-operation in accordance with the interprovincial Agreement for Co-operation and Exchange in Educational and Cultural Matters.
Value: $10,000 per year for Master's; $12,000 for Doctoral level. Renewable, but recipients must apply to have the fellowship renewed.
Deadline: January 31.
Application: Information and application materials are available from the Ontario-Quebec Exchange Fellowship Program website at: http://osap.gov.on.ca. The website is also navigable in French. Proceed from the home page to the Other Bursaries, Fellowships, Grants, and Scholarships menu. Ministry of Training, Colleges and University Support, Fellowships, P.O. Box 4500, 189 Red River Road, 4th Floor, Thunder Bay, Ontario, P7B 6G9; telephone: 807-343-7257; toll-free: 1-800-485-3957.

ONTARIO GRADUATE SCHOLARSHIP PROGRAM
Eligibility: Canadian citizens or permanent residents, or holders of a student visa at the time of application, with at least an A-average in the last two years of study, for graduate studies (Master's or Doctoral level) at an Ontario university.
Value: Awarded for one academic year, which may consist of either two or three terms. Applicants receive $5,000 per term.
Deadline: November 15.
Application: There are different application procedures, depending on your status as an applicant currently enrolled as a full-time or part-time student in an Ontario university, students who graduated from an Ontario university at any time between November 15, 2005, and November 15, 2006, and are not currently registered; and applicants who are not currently enrolled in an Ontario university. Read the “How to Apply” section of the OGS website (https://osap.gov.on.ca/eng/not_secure/Plan_Grants_full_sepapp_OGS_12345.htm) carefully. The website is also navigable in French from the home page, http://osap.gov.on.ca.
Information and application forms are available from the Ontario Graduate Scholarship Program, Student Support, Ministry of Education and Training, P.O. Box 4500, 189 Red River Road, 4th floor, Thunder Bay, Ontario, P7B 6G9; telephone: 807-343-7257, toll-free: 1-800-485-3957; website: http://osap.gov.on.ca.

ORGANIZATION OF AMERICAN STATES FELLOWSHIPS
Eligibility: Offered to Canadian citizens and permanent residents for graduate study and/or postdoctoral research in any field except the medical sciences and related areas, and introductory language studies. They are tenable in any of the 33 OAS member countries, with the exception of the country where the candidate is a citizen or a permanent resident.
Value: Academic Studies Fellowships may provide funds for university tuition and fees, international travel, health insurance, living expenses, and for the purchase of books or other study materials. These benefits will vary depending on the type of fellowship awarded. The OAS General Secretariat shall establish rates of allowances and ceiling of funds provided, taking into consideration the country of study. These are tenable for between three months and two years.
Deadline: January 26.
Application: Application information and forms are available at: www.scholarships.gc.ca.

OVERSEAS RESEARCH STUDENTS (ORSAS) AWARDS
Eligibility: Awards are offered on a competitive basis to overseas students for a higher education degree at certain academic institutions in Britain. All fields of study are supported.
Value: Each award covers the difference between the tuition fee for a British graduate student and the “full-cost” fee for an overseas graduate student. Awards are renewable twice and can, therefore, be held for a maximum of three years.
Deadline: Deadline depends on the institution to which one applies.
Application: Applications should be obtained from the Registry or Scholarships Office of the British academic institutions concerned, or from ORSAS at orsas@helco.ac.uk; website: www.orsas.ac.uk.

PHILIP F. VINEBERG TRAVELLING FELLOWSHIP IN THE HUMANITIES
Established in 1988 by his family in memory of Philip F. Vineberg, Q.C., QC, B.A., M.A., B.C.L., LL.D., former student, Professor and Emeritus Governor at McGill University, for a student graduating in a McGill degree program in arts, education, law, library science, music, religious studies or social work, toward one year of further studies in such disciplines at another university. Awarded to the student who best exemplifies the qualities of intelligence as demonstrated by academic record and creative thinking; breadth of interest, perspective and tolerance as demonstrated by cross-cultural interests, desire to travel and record of service to others; excellence as demonstrated by a record of disciplined achievement and the promise of more to come.
Eligibility: The award will normally be made to a student in the final year of his or her undergraduate degree going into graduate studies in the next academic year, but exceptionally in cases of students completing graduate degrees and leaving McGill for further graduate or postgraduate studies elsewhere in the next academic year. Applicants who are offered substantial fellowship support from other external agencies may be prohibited from taking up the award.
Value: Maximum $14,500.
Application: Forms and information are available from the GPS Fellowships and Awards website: www.mcgill.ca/ gps.

THE RIGHT HONOURABLE PAUL MARTIN SCHOLARSHIPS TO THE UNIVERSITY OF CAMBRIDGE
Eligibility: These scholarships will be awarded to outstanding students registered in the Bar Admission Course in their articling year or who will be graduating in law from a Canadian University.
Value: Scholarship is for one year, covering complete tuition fees, monthly maintenance allowance contribution, air transportation (return from residence in Canada).
Deadline: December 31.
Application: For more information, contact the Canadian Institute for Advanced Legal Studies, Scholarships Awards, 4 Beechwood Avenue, Suite 203, Ottawa, Ontario, K1L 8L9.

RHODES SCHOLARSHIPS
Eligibility: Two scholarships are awarded annually to scholars from the Province of Quebec. These scholarships are tenable at the University of Oxford. They are granted for two years with the possibility of a third year. Candidates must be Canadian citizens or domiciled in Canada and must be born between October 2, 1985 and October 1, 1991. Students in any faculty may apply.
Value: At least £917 per year, which covers personal expenses and tuition.
Deadline: Deadlines for applications are usually in mid-September. Candidates may apply through McGill's two-step internal screening process or independently. The McGill process generally consists of two rounds of interviews, after which successful applications are forwarded to the appropriate Canadian Rhodes Committee with McGill's recommendation.
Application: For further details of the exact deadline, tenure, eligibility, qualifications, and application forms please visit www.mcgill.ca/deanofstudents/recognition or contact Meghan McCulloch at the McGill Office of the Dean of Students, Brown Student Services Building, 3600 McTavish St., Suite 4100, Montreal, Quebec, H3A 1Y2; telephone: 514-398-1731; fax: 514-398-3857; email: meghan.mcculloch@mcgill.ca.
INDEX OF FELLOWSHIPS AND AWARDS

ROTARY FOUNDATION SCHOLARSHIPS
Eligibility: The Rotary Club organization offers three levels of funding, entitled “Ambassadorial Scholarships”: Academic-Year Ambassadorial Scholarships provide funding for one academic year of study in another country; Multi-Year Ambassadorial Scholarships are for two years of degree-oriented study in another country; Cultural Ambassadorial Scholarships are for either three or six months of intensive language study and cultural immersion in another country. Applicants must have completed at least two years of college-level coursework or equivalent professional experience before commencing their scholarship studies. Applicants for Academic-Year and Multi-Year Ambassadorial Scholarships must be proficient in the language of the proposed host country.
Value: Depends on the award program, but the most common scholarship, the Academic-Year Ambassadorial, is intended to help cover round-trip transportation, tuition, fees, room and board expenses, and some educational supplies up to US$23,000 or its equivalent.
Deadline: Set by the individual sponsoring club (usually between March and August).
Application: Deadline and scholarship availability varies depending on the club to which you apply. To find your local, see the club locator at: www.rotary.org/en/Members/RunningAClub/Pages/locateaclub.aspx. Applications must be made through a Rotary Club in the area of the applicant’s permanent residence or place of employment. Information on the scholarship programs as well as application information and suggested locations of tenure, are available at: www.rotary.org/en/StudentsAndYouth/EducationalPrograms/AmbassadorialScholarships/Pages/locateaclub.aspx.

SHASTRI INDO-CANADIAN INSTITUTE – FELLOWSHIPS
COMPETITION
Eligibility: Candidates must be Canadian citizens or permanent residents and possess a Bachelor's or Master's degree. The fellowships are to be used by students to enrol in an Indian institution of higher learning, to work towards a graduate degree or by students enrolled in graduate programs at Canadian institutions to conduct research on India towards a graduate degree (such students must affiliate with an Indian institution during the period of the grant). All awards are subject to approval by the Government of India. All awardees must be affiliated with an Indian institution. The Government of India does not permit research in strategic areas or on sensitive regional, political and social themes.
Value: India Studies Fellowships provide a monthly living allowance of Rs 16,000, a monthly research stipend of Rs 4,000, and return airfare to India.
Deadline: June 30.
Application: For further information regarding competitions and applications, see the India Studies Fellowship web page at: www.sci.org/programmes/for-canadians/india-studies-fellowships-2010-2011. Information regarding application requirements and application forms is also available from the Programme Officer, India Studies, Shastri Indo-Canadian Institute, Room 1402, Education Tower, 2500 University Dr. N.W., Calgary, Alberta, T2N 1N4; telephone: 403-220-7467; fax: 403-289-0100; email: sci@ucalgary.ca.

STUDENT EXCHANGE PROGRAMS – MCGILL UNIVERSITY
AND THE CONFERENCE OF RECTORS AND PRINCIPALS OF THE UNIVERSITIES OF QUÉBEC (CREPUQ)
Note: These are not award or fellowship programs, but may be of interest to students wishing to study abroad for up to one year.
Purpose: These programs provide an opportunity for international education and all its benefits. Student participants remain registered at their home university (McGill), while attending a foreign campus. Currently, McGill University has more than 100 bilateral student exchange agreements in 31 countries and more than 200 CREPUQ student exchange agreements in seven countries.
Information: Information on exchange and study abroad opportunities, as well as funding options administered through the Student Exchanges and Study Abroad Office (SESA) are available at www.mcgill.ca/studyabroad, Enrolment Services, James Administration Building, Room 206, McGill University; telephone: 514-398-8342; email: studentexchanges@mcgill.ca.

THOMAS SHEARER STEWART TRAVELLING FELLOWSHIP
Eligibility: The fellowship was established in 1967 by the family of the late Thomas Shearer Stewart, QC, a graduate of the Faculty of Law class of 1908 and is granted to a recent graduate of the Faculty of Law designated by the Dean of the Faculty. Preference is given to a graduate who is a Canadian citizen intending to reside in Canada upon completion of studies.
Value: $12,000, awarded at the discretion of the Faculty of Law.
Deadline: May 1.
Application: Further information is available from the Student Affairs Office, Faculty of Law.

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1.1 Staff

Associate Professors
- J.C. Henning; B.Sc., Ph.D.(Guelph)
- P.J. Thomassin; B.Sc.(McG.), M.S., Ph.D.(Hawaii Pac.)

Assistant Professor
- A. Naseem; B.Sc.(McG.), M.Sc., Ph.D.(Mich.)

1.2 Programs Offered

For Program Information please see the Department of Natural Resource Sciences, section 55.

2 Anatomy and Cell Biology

Department of Anatomy and Cell Biology
Strathcona Anatomy and Dentistry Building
3640 University Street, Room 1/60
Montreal, QC H3A 2B2
Canada

Telephone: 514-398-6335
Fax: 514-398-5047
Website: www.medicine.mcgill.ca/anatomy

Chair — John J.M. Bergeron

2.1 Staff

Emeritus Professors
- Yves Clermont; B.Sc.(Montr.), Ph.D.(McG.), F.R.C.S.
- Dennis G. Osmond; C.M., B.Sc., M.B., Ch.B., D.Sc.(Brist.), M.R.C.S., L.R.C.P., F.R.S.C.
- Hershey Warshawsky; B.Sc.(Sir G. Wms.), M.Sc., Ph.D.(McG.)

Professors
- Philip Barker; B.Sc.(S. Fraser), Ph.D.(Alta.), (joint appt. with Neurology & Neurosurgery)
- Alain Beaudet; M.Sc., Ph.D., M.D.(Montr.) (joint appt. with Neurology & Neurosurgery)
- Gary C. Bennett; B.A., B.Sc.(Sir G. Wms.), M.Sc., Ph.D.(McG.)
- John J.M. Bergeron; B.Sc.(McG.), D.Phil.(Oxf.)
- James R. Brewer; B.S.(Tufts), Ph.D.(Harv.)
- Miguel Burnier; M.D., M.Sc., Ph.D.(Brazil) (joint appt. with Ophthalmology)
- Samuel David; Ph.D.(Manit.) (joint appt. with Neurology & Neurosurgery)
- Louis Hermon; B.A.(Loyola), M.Sc., Ph.D.(McG.)
- Marc D. McKee; B.Sc., M.Sc., Ph.D.(McG.) (joint appt. with Dentistry)
- Peter McPherson; B.Sc.(Manit.), Ph.D.(Iowa) (joint appt. with Neurology & Neurosurgery)
- Sandra C. Miller; B.Sc.(Sir G. Wms.), M.Sc., Ph.D.(McG.)
- Carlos R. Morales; D.V.M.(U., Argentina), Ph.D.(McG.)
- Barry I. Posner; M.D.(Manit.), F.R.C.P(C) (joint appt. with Medicine)

Adjunct Professors
- Michel Cayouette; Ph.D.(Laval)
- Miroslaw Czyler; M.Sc., Ph.D.(Lodz, Poland)
- Daniel Cyr; B.Sc., M.Sc.(C'dia), Ph.D.(Manit.)
- Michel Desjardins; M.Sc., Ph.D.(Manit.)
- Jacques Drouin; B.Sc., D.Sc.(Laval)
- David Hipfner; B.Sc., Ph.D.(Qu.)
- Marko Horb; Ph.D.(SUNY)
- Sadayuki Inoue; M.Sc., Ph.D.(Hok. U.)
- Artur Kania; Ph.D.(Baylor)
- Bartha Knoppers; Ph.D.(France)
- André Nantel; B.Sc., M.Sc.(Laval), Ph.D.(Chapel Hill)
- Maureen O’Connor-McCourt; Ph.D.(Alta.)
- Alexei Pshezhetsky; Ph.D.(Russia)
- Joseph Schrag; M.Sc., Ph.D.(Ill.)
- Alilla Sik; M.Sc., Ph.D.(Hungary)
- Pierre Thibault; Ph.D.(Montr.)
- Jan Van Oostrum; M.A., Ph.D.(Col.)

Faculty Lecturer:
- Ayman Behiery; M.B., Ch.B.(Cairo)

2.2 Programs Offered

Graduate research activities leading to the presentation of the M.Sc. and Ph.D. thesis involve original experimental work in one of the areas being actively investigated by the Department’s Research Supervisors. Current research projects include: cell
biology of secretion; cell biology of endocytosis; signal transduction, cell receptors for growth factors and hormones; synthesis and migration of glycoproteins; subcomponents of the Golgi apparatus and their function; biogenesis and function of lysosomes; cell turnover in various tissues; control of cell growth and proliferation; molecular biology of extracellular matrix; structure, composition and function of basement membranes and connective tissue microfibrils; cell and microfibrils; cell and molecular biology of spermatogenesis; genetic expression of proteins in the formation of cytoskeletal components of spermatozoa; role of endocytosis and secretion by epididymal cells in sperm maturation; molecular biology of Sertoli cell secretions and their interaction with germ cells; synchronization of sperm production; transferrin, transferrin receptors and iron in germinal cells; differentiation of B lymphocytes in bone marrow in relation to mechanisms of humoral immunity, immunodeficiency states and B cell neoplasias; control mechanisms and cytoxines in B lymphopoiesis; in situ organization and stromal cell-interactions of B lineage precursor cells in bone marrow; microenvironmental regulation of hemopoiesis; differentiation and regulation of cells mediating natural tumor immunosurveillance; tumor cell biology; cell and molecular biology of the formation of dental enamel, dentin and bone; structure of organic matrices and organic crystals of dental enamels; role of hormones and their binding sites with calcified tissues; secretion and degradation of the proteins of enamel matrix, hypothalamo-pituitary function and gonadotropin patterns in ovarian follicular development; polyovarian ovarian disease; computer assisted modeling of morphometric and kinetic data; cell biology and molecular genetics of ageing; senescence and cell cycle-specific genes and their products.

Human Systems Biology Stream is offered as a complementary stream to the existing M.Sc. and Ph.D. programs entailing a multi-disciplinary approach to achieving a M.Sc. and Ph.D. in Cell Biology and Anatomy. The primary objective of this stream is to offer graduate students academic training in Human Systems Biology. This is an exciting and new multi-disciplinary field that aims to understand molecular human diseases at the systems level.

Research in the Department investigates the dynamics and organization of molecules, organelles, cells and tissues in several major systems of the body. The work makes fundamental contributions to a number of established and emerging multidisciplinary fields: cell and molecular biology, cellular immunology and hematology, reproductive biology, calcified tissue biology, tumor cell biology, developmental biology, neurobiology and ageing.

The Department offers contemporary facilities for the wide range of techniques currently employed in research. Modern methods of cell and molecular biology, immunology and biochemistry are used in conjunction with specialized microscopy in a variety of experimental systems. Techniques used by Department members include labelling with radioisotopes and other tracers, radioautography, immunocytochemistry, histochemistry, cryo immune microscopy, fluorescence microscopy, high resolution electron microscopy, scanning electron microscopy, backscattered electron imaging, confocal microscopy, microinjection, video-microscopy in living cells, X-ray microanalysis, electron diffraction, freeze-fracture replication, computer reconstruction and quantitation, chromatography, subcellular fractionation, recombinant DNA technology, in situ hybridization, tissue grafting, cell and tissue culture, mutant and transgenic mice, hybridomas, and monoclonal antibodies.

The Department has one of the largest electron microscope facilities in Canada. Currently in use are three modern electron microscopes, including a high voltage instrument, the JEOL 2000FX. Combined with some of these microscopes are computer-aided analytical equipment capable of elemental microanalysis, histomorphometry, reconstruction and quantitation. The high voltage microscope is particularly useful for certain analytical electron optical procedures such as electron diffraction, lattice imaging and stereo electron microscopy.

2.3 Admission Requirements

M.Sc. and Ph.D. Programs

1. A B.Sc. degree in life sciences or any of M.D., D.D.S. or D.V.M. degrees from a university of recognized reputation.
2. Evidence of a high academic achievement with a minimum cumulative grade point average (CGPA) of 3.3 on 4.0.

Admission to a Qualifying Program

Applicants whose academic degree and standing entitle them to serious consideration for admission to graduate studies, but who are considered inadequately prepared in the area chosen may, upon recommendation of the Graduate Students Committee and with the permission of the Director of Graduate and Postdoctoral Studies, be admitted to Qualifying Programs. The courses to be taken in qualifying programs will be stipulated by the Graduate Students Committee. (Note: Only one qualifying program of a maximum of one year is permitted.)

2.4 Application Procedures

Application for admission to graduate studies for the degrees of M.Sc. or Ph.D. in Cell Biology and Anatomy should be made to the Chair of Graduate Studies, Department of Anatomy and Cell Biology.

Application forms are available at www.mcgill.ca/gradapplicants/apply and program guidelines are detailed at www.mcgill.ca/anatomy/graduate.

Dates for Guaranteed Consideration

For dates for guaranteed consideration, please consult the following website: www.mcgill.ca/gradapplicants/programs. Then select the appropriate program.

Note: We are not willing to consider any applications to be admitted for the Summer term.

Documents Required

1. Two official copies of complete university-level academic records to date (this also applies to McGill University transcripts). It may be desirable to submit a list of the titles of the courses taken, if transcripts give code numbers only.
2. It is the applicant's responsibility to contact the institution(s) attended and request that the transcripts be forwarded directly to the Department of Anatomy.
3. Fee of $100 in Canadian funds for processing the application.
4. TOEFL score (where applicable).

McGill's online application form for graduate program candidates is available at www.mcgill.ca/gradapplicants/apply.

2.5 Program Requirements

Program guidelines can be found at www.mcgill.ca/anatomy/graduate.

M.Sc. in Cell Biology and Anatomy (48 credits)

Required Course (9 credits)

ANAT 699 (9) M.Sc. Thesis Research Seminar

Complementary Courses (15 credits)

Histology Stream (9 credits):

ANAT 663D1/D2 (9) Histology

or

Cell Developmental Biology Stream (6 credits):

ANAT 690D1/D2 (6) Cell and Developmental Biology
or

Human Systems Biology Stream (6 credits):
ANAT 690D1/D2 (6) Cell and Developmental Biology

Up to 9 credits from the following to complete the M.Sc. credit requirements:

List A (Histology Stream):
ANAT 541 (3) Cell and Molecular Biology of Aging
ANAT 614D1/D2 (9) Human Anatomy and Embryology

or

List B (Cell Developmental Biology Stream):
ANAT 663D1/D2 (9) Histology

or

List C (Human Systems Biology Stream):
BMDE 502 (3) BME Modelling and Identification
BMDE 519 (3) Biomedical Signals and Systems
BTEC 501 (3) Bioinformatics
COMP 564 (3) Computational Gene Regulation
COMP 680 (4) Mining Biological Sequences
EXMD 602 (3) Techniques in Molecular Genetics
MIMM 613 (3) Current Topics 1
MIMM 614 (3) Current Topics 2
MIMM 615 (3) Current Topics 3

Thesis Component - Required (24 credits)
ANAT 698 (24) M.Sc. Thesis Research 1

Ph.D. in Cell Biology and Anatomy

For the Ph.D. degree, the student must take either ANAT 663D1/D2 (9 credits) or ANAT 690D1/D2 (6 credits). In addition, Ph.D. candidates will write a comprehensive examination after eighteen months, ANAT 701.

For both degrees, the major emphasis is placed on the conduct of original research and the preparation of a thesis.

2.6 Courses

Students preparing to register should consult Class Schedule on the web at www.mcgill.ca/student-records/register/class-schedule for the most up-to-date list of courses available; courses may have been added, rescheduled or cancelled after this Calendar was published. Class Schedule lists courses by term and includes days, times, locations, and names of instructors.

Courses with numbers ending D1 and D2 are taught in two consecutive terms (most commonly Fall and Winter). Students must register for both the D1 and D2 components. No credit will be given unless both components (D1 and D2) are successfully completed in consecutive terms.

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

ANAT 541 CELL AND MOLECULAR BIOLOGY OF AGING. (3) (Winter) (3 hours lecture) (Prerequisites: ANAT 212 (or BIOC 212 or BIOL 201), ANAT 261, or ANAT 262, or permission of instructor.) (Corequisites: BIOL 301.) Complex aging process, including theories and mechanisms of aging, animal model systems used to study aging, age-dependent diseases, for example, Alzheimer’s, osteoporosis, and cancer, and age-related diseases, for example, Werner’s syndrome and dyskeratosis congenita.

ANAT 663D1 (4.5), ANAT 663D2 (4.5) HISTOLOGY. (Students must register for both ANAT 663D1 and ANAT 663D2) (No credit will be given for this course unless both ANAT 663D1 and ANAT 663D2 are successfully completed in consecutive terms) The study of the cytology and structure of tissues and organs.

ANAT 690D1 (3), ANAT 690D2 (3) CELL AND DEVELOPMENTAL BIOLOGY. (Students must register for both ANAT 690D1 and ANAT 690D2) (No credit will be given for this course unless both ANAT 690D1 and ANAT 690D2 are successfully completed in consecutive terms) Current developments in molecular cell biology and developmental biology will be presented by course coordinators and staff from primary papers in the scientific literature. These will be researched and critiqued by students through oral and written presentations. Two term papers are required for students taking the course.

ANAT 698 M.Sc. THESIS RESEARCH 1. (24)
ANAT 698D1 (12), ANAT 698D2 (12) M.Sc. THESIS RESEARCH 1. (Students must register for both ANAT 698D1 and ANAT 698D2) (No credit will be given for this course unless both ANAT 698D1 and ANAT 698D2 are successfully completed in consecutive terms) (ANAT 698D1 and ANAT 698D2 together are equivalent to ANAT 698)

ANAT 699 M.Sc. THESIS RESEARCH SEMINAR. (9)
ANAT 699D1 (4.5), ANAT 699D2 (4.5) M.Sc. THESIS RESEARCH SEMINAR. (Students must register for both ANAT 699D1 and ANAT 699D2) (No credit will be given for this course unless both ANAT 699D1 and ANAT 699D2 are successfully completed in consecutive terms) (ANAT 699D1 and ANAT 699D2 together are equivalent to ANAT 699)

ANAT 701 PH.D. COMPREHENSIVE EXAMINATION. (0)
ANAT 701D1 (0), ANAT 701D2 (0) PH.D. COMPREHENSIVE EXAMINATION. (Students must register for both ANAT 701D1 and ANAT 701D2) (No credit will be given for this course unless both ANAT 701D1 and ANAT 701D2 are successfully completed in consecutive terms) (ANAT 701D1 and ANAT 701D2 together are equivalent to ANAT 701)

3 Animal Science

Department of Animal Science
Macdonald Campus
21,111 Lakeshore Road
Sainte-Anne-de-Bellevue, QC H9X 3V9
Canada

Telephone: 514-398-7794
Fax: 514-398-7964
Email: animal.science@mcgill.ca
Website: www.mcgill.ca/animal

Chair — Kevin M. Wade

3.1 Staff

Emeritus Professors
R.B. Buckland; B.Sc.(Agr.), M.Sc.(McG.), Ph.D.(Md.)
U. Kuhnlein; B.Sc.(Fed. Inst. of Tech., Zurich), Ph.D.(Geneva)
J.E. Moxley; B.Sc.(Agr.), M.Sc.(McG.), Ph.D.(C’nell)

Professors
J.F. Hayes; B.Agr.Sc., M.Agr.Sc.(Dublin), Ph.D.(N. Carolina St.)
K.F. Ng-Kwai-Hang; B.Sc.(Agr.), M.Sc., Ph.D.(McG.)
X. Zhao; B.Sc., M.Sc.(Nanjing), Ph.D.(C’nell) (James McGill Professor)

Associate Professors
V. Bordignon; D.V.M.(URCAMP, Brazil), M.Sc.(UFPel, Brazil), Ph.D.(Mont.) (on leave 2009-10)
R.I. Cue; B.Sc.(Newcastle-upon-Tyne), Ph.D.(Edin.)
H. Monardes; Ing.Agr.(Concepcion, Chile), M.Sc., Ph.D.(McG.)
A.F. Mustafa; B.Sc., M.Sc.(Khartoum), Ph.D.(Sask.) (William Dawson Scholar)
L.E. Phillip; B.Sc.(Agr.), M.Sc.(Agr.)(McG.), Ph.D.(Guelph)
K.M. Wade; B.Sc.(Agr.), M.Sc.(Agr.)(Dublin), Ph.D.(C’nell)
D. Zadworny; B.Sc., Ph.D.(Guelph)

Assistant Professors
M. Chénier; B.Sc.(Laval), M.Sc.(Queb.), Ph.D.(McG.)
R. Duggavathi; B.V.Sc., M.V.Sc.(Bangalore), Ph.D.(Sask.)
S. Kimmins; B.Sc.(Dal.), M.Sc.(Nova Scotia Ag.), Ph.D.(Dal.)

Adjunct Professors
P. Lacasse, D. Lefebvre, B. Murphy
3.2 Programs Offered

The Department provides laboratory facilities for research work leading to the degrees of Master of Science and Doctor of Philosophy in the disciplines of animal breeding (genetics), nutrition, reproductive physiology, molecular biology, milk biochemistry and information systems. Within these areas advantage may be taken of strong research programs and expertise in molecular biology and milk biochemistry. A new inter-disciplinary option in Bioinformatics is also available for doctoral students. Students registered in the Department of Animal Science may develop programs in conjunction with other units at McGill, for example the Nutrition and Food Science Centre or the School of Dietetics and Human Nutrition.

Each student has an advisory committee composed of the thesis supervisor and at least two other faculty members.

3.3 Admission Requirements

M.Sc. (Thesis)
Candidates are required to have either a bachelor's degree in Agriculture or a B.Sc. degree in an appropriate, related discipline with an equivalent cumulative grade point average of 3.0/4.0 (second class-upper division) or 3.2/4.0 during the last two years of full-time university study. High grades are expected in courses considered by the academic unit to be preparatory to the graduate program.

M.Sc. Applied
All candidates are required to have a B.Sc. degree or equivalent.

Ph.D.
Candidates are normally required to have a M.Sc. degree in an area related to the chosen field of specialization for the Ph.D. program.

3.4 Application Procedures

Applicants for graduate studies through academic units in the Faculty of Agricultural and Environmental Sciences must forward supporting documents to:

Department of Animal Science
MacDonald Campus of McGill University
21, 111 Lakeshore
Sainte-Anne-de-Bellevue, QC H9X 3V9
Canada
Telephone: 514-398-7792
Fax: 514-398-7964
Email: animal.science@mcgill.ca

Applications will be considered upon receipt of a signed and completed application form, $100 application fee, and the following supporting documents:

Transcripts - Two official copies of all university-level transcripts with proof of degree(s) granted. Transcripts written in a language other than English or French must be accompanied by a certified translation. An explanation of the grading system used by the applicant's university is essential. It is the applicant's responsibility to arrange for these letters to be sent.

Letters of Recommendation - Two letters of recommendation on letterhead (official paper) of originating institution or bearing the university seal and with original signatures from two instructors familiar with the applicant's work, preferably in the applicant's area of specialization. It is the applicant's responsibility to arrange for these letters to be sent.

Competency in English - 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 appropriate exams, e.g., TOEFL (minimum score 550, 213 on computerized test, or 86 on the internet-based test, with each component score not less than 20) or IELTS (minimum 6.5 overall band). The MCHE is not considered equivalent. Results must be submitted as part of the application. The University code is 0935 (McGill University, Montreal); please use Department code 31 (Graduate Schools), Biological Sciences - Agriculture, to ensure that your TOEFL reaches this office without delay.

Graduate Record Exam (GRE) - The GRE is not required, but it is highly recommended.

DOCUMENTS SUBMITTED WILL NOT BE RETURNED.

Application Fee (non-refundable) - A fee of $100 Canadian must accompany each application (including McGill students), otherwise it cannot be considered. This sum must be remitted using one of the following methods:

1. Credit card by (completing the appropriate section of the application form). N.B.: online applications must be paid for by credit card.
2. Certified cheque in CAD$ drawn on a Canadian bank.
4. Canadian Money order in CAD$.
5. U.S. Money Order in USD$.
6. An international draft in Canadian funds drawn on a Canadian bank requested from the applicant's bank in his/her own country.

Dates for Guaranteed Consideration

For dates for guaranteed consideration, please consult the following website: www.mcgill.ca/gradapplicants/programs. Then select the appropriate program. It may be necessary to delay review of the applicant's file until the following admittance period if application materials including supporting documents are received after the dates for guaranteed consideration. International applicants are advised to apply well in advance of these dates because immigration procedures may be lengthy. Applicants are encouraged to make use of the online application form available on the web at www.mcgill.ca/gradapplicants/apply.

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

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

Qualifying Students – Some applicants whose academic degrees and standing entitle them to serious consideration for admission to graduate studies, but who are considered inadequately prepared in the subject selected may be admitted to a Qualifying Program if they have met the Graduate and Postdoctoral Studies minimum CGPA of 3.0/4.0. The course(s) to be taken in a Qualifying Program will be prescribed by the academic unit concerned. Qualifying students are registered in graduate studies, but not as candidates for a degree. Only one qualifying year is permitted. Successful completion of a qualifying program does not guarantee admission to a degree program.
3.5 Program Requirements

**M.Sc. (Thesis) (45 credits)**

Four one-term courses or the equivalent and two seminar courses at the postgraduate level are required, as a minimum, although a student may be advised to take additional courses as specified by his/her advisory committee. Advanced undergraduate courses may be considered for graduate credit if approved by the student's committee and Graduate and Postdoctoral Studies and passed at the graduate level; generally, this will not constitute more than one of the four required courses.

A minimum of 45 credits and completion of an acceptable thesis is required for the M.Sc. degree; 14 credits are for course work and 31 credits for the thesis (ANSC 680, ANSC 681, ANSC 682, and ANSC 683). Exceptional M.Sc. students may be considered for Ph.D. status after one full year in the Department.

**M.Sc. Applied (45 credits)**

The M.Sc. Applied (Non-Thesis) degree is oriented to animal scientists already working in industry or government, to undergraduate students inspired by concepts in sustainable and integrated animal agriculture, to project leaders interested in animal resource management and to veterinarians. The program aims to provide graduate training in applied areas of animal production with a view towards integrating technology and management in animal production with allied areas of agricultural resource utilization.

**Project Component – Required (15 credits)**

ANSC 643 (3) Project 1
ANSC 644 (3) Project 2
ANSC 645 (3) Project 3
ANSC 646 (3) Project 4
ANSC 647 (3) Project 5

**Complementary Courses (30 credits)**

12 credits from the following list:

- AEMA 610 (3) Statistical Methods 2
- ANSC 504 (3) Population Genetics
- ANSC 508 (3) Tools in Animal Biotechnology
- ANSC 551 (3) Carbohydrate & Lipid Metabolism
- ANSC 552 (3) Protein Metabolism & Nutrition
- ANSC 605 (3) Estimation: Genetic Parameters
- ANSC 606 (3) Selection Index & Animal Improvement
- ANSC 607 (3) Linear Models in Agricultural Research
- ANSC 611D1 (1.5) Advanced Reproductive Biology
- ANSC 622 (3) Selected Topics in Molecular Biology
- ANSC 630 (3) Experimental Techniques: Animal Science: Macro
- ANSC 635 (3) Vitamins and Minerals in Nutrition
- ANSC 636 (3) Analysis - Animal Breeding Research Data
- ANSC 691 (3) Special Topic: Animal Sciences 1
- ANSC 692 (3) Topic in Animal Sciences 1

18 credits from the following list:

- AGEC 630 (3) Food and Agricultural Policy
- AGEC 633 (3) Environmental and Natural Resource Economics
- AGEC 642 (3) Economics of Agricultural Development
- BREE 518 (3) Bio-Treatment of Wastes
- BTEC 501 (3) Bioinformatics
- BTEC 502 (3) Biotechnology Ethics and Society
- ENTO 550 (3) Veterinary and Medical Entomology
- FDSC 535 (3) Food Biotechnology
- PLNT 602 (3) Forage Crop Experimentation
- PLNT 636 (3) Epidemiology and Management of Plant Disease
- SOIL 521 (3) Soil Microbiology and Biochemistry
- WILD 605 (3) Wildlife Ecology

**Ph.D.**

Since the Ph.D. is primarily a research degree, the amount of course work required may comprise a smaller portion of the total than is the case for the M.Sc. this will depend on the background of the individual student, and must be approved by the student's advisory committee. This course work must include two seminar courses at the graduate level and the Ph.D. Comprehensive Examination ANSC 701.

The thesis must clearly show originality and be a contribution to knowledge.

**Ph.D. in Animal Science – Bioinformatics Option/Concentration**

**Required Courses (5 credits)**

ANSC 701 (0) Doctoral Comprehensive Examination
ANSC 797 (1) Animal Science Seminar 3
ANSC 798 (1) Animal Science Seminar 4
COMP 616 (3) Bioinformatics Seminar

**Complementary Courses (6 credits)**

6 credits from the following courses:

- BINF 621 (3) Bioinformatics: Molecular Biology
- BMDE 652 (3) Bioinformatics: Proteomics
- BTEC 555 (3) Structural Bioinformatics
- COMP 618 (3) Bioinformatics: Functional Genomics
- PHGY 603 (3) Systems Biology and Biophysics

Additional courses at the 500, 600, or 700 level may be required at the discretion of the candidate's supervisory committee.

**Thesis - Required**

3.6 Courses

Students preparing to register should consult Class Schedule on the web at [www.mcgill.ca/student-records/register/class-schedule](http://www.mcgill.ca/student-records/register/class-schedule) for the most up-to-date list of courses available; courses may have been added, rescheduled or cancelled after this Calendar was published. Class Schedule lists courses by term and includes days, times, locations, and names of instructors.

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

**ANSC 504 POPULATION GENETICS.** (3) (Fall) (3 lectures) Considerations of the basic principles of Mendelian genetics dealing with the genetic properties of populations and extension to the simultaneous segregation of genes at many loci, polygenic inheritance and an introduction to quantitative genetics, including mechanisms of transmission, segregation, linkages between genes and the effect of natural and artificial selection.

**ANSC 506 ADVANCED ANIMAL BIOTECHNOLOGY.** (3) (Fall) (Prerequisites: AEBI 202, ANSC 400.) New concepts and applications of animal biotechnology in agriculture, biomedicine, environmental preservation.

**ANSC 508 TOOLS IN ANIMAL BIOTECHNOLOGY.** (3) (Fall) (Restriction: Permission of instructor.) Essential laboratory techniques in animal biotechnology: extraction of nucleic acids, PCR technology, gel electrophoresis, construction of gene expression vectors, transformation of bacterial and mammalian cells and monitoring gene expression using reporter genes.

**ANSC 551 CARBOHYDRATE AND LIPID METABOLISM.** (3) (Winter) (3 lectures) Comparative aspects of nutrition and metabolism of carbohydrate and lipid from the cellular level through the multi-organ of the whole organism. Main topics will include biothermodynamics, calorimetry, cellular metabolism and functions of carbohydrate and lipid, digestion, absorption and utilization of dietary carbohydrate and lipid.
ANSC 552 PROTEIN METABOLISM AND NUTRITION. (3) (Fall) (3 lectures) Comparative aspects of nutrition and metabolism of amino acids and proteins from the cellular level on through the multisystem operation of the whole organism. Main topics include cellular metabolism and functions of amino acids and proteins, digestion, absorption and utilization of dietary protein. Comparison between farm animals and humans.

ANSC 560 BIOLOGY OF LACTATION. (3) (Winter) (Restriction: Not open to students who have taken ANSC 460.) An interdisciplinary approach to the study of mammary development, the onset of lactation and its cessation, comparing the differences in mammalian species in mammary development from embryological, pre- and post-pubertal and pre- and post-partum aspects. Lactation at the cellular and biochemical levels.

ANSC 565 APPLIED INFORMATION SYSTEMS. (3) (Winter) (3 lectures and one 2-hour lab) Introduction to concepts of an Information System and subsequent application to various scenarios in agriculture. Industry analysis in terms of users, goals, available data/information, communication, delivery structure, decision making, feedback, exploitation of technology and possible improvements using the Internet. Individual case studies and familiarisation with cutting-edge computer applications.

ANSC 600 ADVANCED EUKARYOTIC CELLS AND VIRUSES. (3) (Prerequisite: Permission of instructor) (Restriction: Not open to students who have taken ANSC 400.) Underlying molecular basis for various methodologies in molecular biology, including the genetic basis for viral infections and tumorigenesis, and the use of molecular genetic approaches to address biological problems.

ANSC 605 ESTIMATION: GENETIC PARAMETERS. (3) (3 lectures) (Given in alternate years) General methods for the estimation of components of variance and co-variance are considered, with specific emphasis given to their application to heritability, repeatability and genetic correlation estimation.

ANSC 606 SELECTION INDEX AND ANIMAL IMPROVEMENT. (3) (3 lectures) Selection index principles and their application to live-stock improvement are considered, with emphasis on the estimation of genetic breeding values for single and multi-trait selection.

ANSC 611 ADVANCED REPRODUCTIVE BIOLOGY. (3) (2 lectures, 1 seminar) (Prerequisite: No prerequisites, but students need to have a solid background in reproductive physiology.) (Note: Course offered in alternate years.) General methods for the estimation of components of variance and co-variance are considered, with specific emphasis given to their application to heritability, repeatability and genetic correlation estimation.

ANSC 611D1 (1.5), ANSC 611D2 (1.5) ADVANCED REPRODUCTIVE BIOLOGY. (No prerequisites, but students need to have a solid background in reproductive physiology.) (Note: Course offered in alternate years.) General methods for the estimation of components of variance and co-variance are considered, with specific emphasis given to their application to heritability, repeatability and genetic correlation estimation.

ANSC 622 SELECTED TOPICS IN MOLECULAR BIOLOGY. (3) (1 lecture and 2 seminars) (Prerequisite: MICR 500 or permission of instructor) Key examples of applications of molecular biology to the study of animal physiology and animal genetics will be drawn from the current literature and discussed in depth. The course has a dual purpose. It will familiarize students with current events at the forefront of molecular biology and will teach them how to read and critically evaluate research publications.

ANSC 630 EXPERIMENTAL TECHNIQUES: ANIMAL SCIENCE: MACRO. (3) (1 lecture, 1 lab) Lectures and laboratories dealing with animal experimentation. Emphasis on the design and conduct of animal studies, selection of experimental animals, chemical and biological assays, statistical analysis, interpretation of data and preparation of technical reports.

ANSC 635 VITAMINS AND MINERALS IN NUTRITION. (3) (3 lectures) Modularised course dealing with advanced topics in Nutrition. The core of the course will focus on vitamins and minerals.

ANSC 636 ANALYSIS - ANIMAL BREEDING RESEARCH DATA. (3) (3 lectures) An advanced graduate course to give training and experience in statistical techniques applied to quantitative genetics and animal breeding. To consider aspects of data handling of large data sets (100,000 observations), checks for consistency and connectedness in data. Considerations in choosing efficient analytical procedures in fitting these models and development of efficient numerical algorithms to apply these procedures.

ANSC 643 PROJECT 1. (3) Review of the literature and design of the project. This project relates to the M.Sc. Applied (non-thesis) degree.

ANSC 644 PROJECT 2. (3) Continuation of the review of the literature and design of project. This project relates to the M.Sc. Applied (non-thesis) degree.

ANSC 645 PROJECT 3. (3) Execution and write-up of project. This project relates to the M.Sc. Applied (non-thesis) degree.

ANSC 680 M.Sc. THESIS 1. (7) Independent research under the direction of a supervisor toward completion of M.Sc. thesis.

ANSC 681 M.Sc. THESIS 2. (7) Independent research under the direction of a supervisor toward completion of M.Sc. thesis.

ANSC 682 M.Sc. THESIS 3. (7) Independent research under the direction of a supervisor toward completion of M.Sc. thesis.


ANSC 691 SPECIAL TOPIC: ANIMAL SCIENCES. (3) Prescribed reading, conference or practical work on a selected topic in the student's area of specialization, not otherwise available in other courses; under staff supervision. An approved course outline must be on file in the Departmental office prior to registration deadline.

ANSC 692 TOPIC IN ANIMAL SCIENCES 1. (3) Prescribed reading, conference or practical work on a selected topic in the student's area of specialization, not otherwise available in other courses; under staff supervision. An approved course outline must be on file in the Departmental office prior to registration deadline.

ANSC 695 ANIMAL SCIENCE SEMINAR 1. (1) (1 hour) One of two seminars to be given by all students in an M.Sc. program. Consists of a review of literature in relation to the student's proposed research and an experimental design of the research to be conducted.

ANSC 696 ANIMAL SCIENCE SEMINAR 2. (1) (1 hour) One of two seminars to be given by all students in an M.Sc. program. Presentation of a current scientific topic which is not related to the student's research. The topic for the presentation should be cleared by the thesis supervisor.

ANSC 701 DOCTORAL COMPREHENSIVE EXAMINATION. (0) (See Faculty Regulations)

ANSC 797 ANIMAL SCIENCE SEMINAR 3. (1) (1 hour) One of two seminars to be given by all students in a Ph.D. program. Review of literature in relation to the student's proposed research and an experimental design of the research to be conducted.

ANSC 798 ANIMAL SCIENCE SEMINAR 4. (1) (1 hour) One of two seminars to be given by all students in a Ph.D. program. Presentation of a current scientific topic which is not related to the student's research. The topic for the presentation should be cleared by the thesis supervisor.
4 Anthropology

Department of Anthropology
Stephen Leacock Building
855 Sherbrooke Street West, Room 718
Montreal, QC H3A 2T7
Canada

Telephone: 514-398-4300
Fax: 514-398-7476
Website: www.mcgill.ca/anthropology

Chair — Ronald Niezen

4.1 Staff

Professors
Donald W. Atwood; A.B.(Calif.), Ph.D.(McG.) (on sabbatical 2009-10)
Laurel Bosser; B.A.(Barnard), M.A., Ph.D.(SUNY)
Colin A. Chapman; B.Sc., M.A., Ph.D.(Alta.) (joint appt. with McGill School of Environment)
Ronald W. Niezen; B.A.(Br. Col.), M.Phil., Ph.D.(Camb.)
Jérôme Rousseau; M.A.(Montr.), Ph.D.(Can.)
Philip Carl Saltzman; A.B.(Antioch), M.A., Ph.D.(Chic.)
Allan Young; B.A.(Penn.), M.A., Ph.D.(Penn.) (joint appt. with Social Studies of Medicine)

Associate Professors
Michael S. Bisson; B.A., M.A., Ph.D.(Calif.) (on sabbatical 2009-10)
André Costopoulos; B.A.(McG.), M.Sc.(Montr.), Ph.D.(Oulu, Finland)
Ellen Corin; B.A., M.A., Ph.D.(Louvain) (joint appt. with Psychiatry)
John Galaty; M.A., Ph.D.(Chic.)
Sandra T. Hyde; B.A.(Calif.-Santa Cruz), M.P.H.(Hawaii), Ph.D.(Calif., Berk.)
Carmen Lambert; B.A.(Montr.), M.A., Ph.D.(McG.)
Kristin Norget; B.A.(Vic. (BC)), M.Phil., D.Phil.(Can.)
James M. Savelle; B.Sc., M.Sc.(Ott.), M.A.(Ark.), Ph.D.(Alta.)
Colin H. Scott; B.A.(Regina), M.A., Ph.D.(McG)

Assistant Professors
Ismael Vaccaro; B.A.(Barcelona), M.A.(E.H.E.SS. Paris), M.A., Ph.D.(Wash.) (joint appt. with McGill School of Environment)
Nicole Couture; B.A.(Trent), M.A., Ph.D.(Chic.)
Setrag Manoukian; B.A.(U. di Venezia), M.A., Ph.D.(Mich.) (joint appt. with Institute of Islamic Studies)

4.2 Programs Offered

The Department offers training leading to the M.A. and Ph.D. in Anthropology. Admission is to the M.A. program, except when a student already holds a master’s degree. It is expected, however, that most applicants will be oriented towards achievement of the Ph.D.

The Department offers several alternative M.A. programs:
1. M.A. with thesis;
2. M.A. with thesis, Development Studies option;
4. M.A. with thesis, Gender and Women’s Studies option;
5. M.A. with research paper (not offered in 2009-10);
6. M.A. in Medical Anthropology.

4.3 Admission Requirements

Master's
Admission to the M.A. program is open competitively to students holding an Honours or Major B.A. in Anthropology. Outstanding candidates with B.A. degrees in other disciplines but with substantial background related to anthropology are sometimes admitted on the condition that they complete a specified number of additional courses in Anthropology.

The applicants admitted usually have undergraduate Grade Point Averages of 3.5 or above on a 4.0 point scale.

Ph.D.
Admission to the Ph.D. program is open competitively to students with a master’s degree in Anthropology. In very special circumstances candidates with master’s degrees in related disciplines may be admitted.

4.4 Application Procedures

Dates for Guaranteed Consideration
For dates for guaranteed consideration, please consult the following website: www.mcgill.ca/gradapplicants/programs. Then select the appropriate program.

Applications will be considered upon receipt of:
1. Graduate Application Form;
2. application fee ($100);
3. official transcripts;
4. two letters of recommendation;
5. statement of research interests (including reasons for wanting to pursue them at McGill);
6. test results (GRE); and
7. test results (TOEFL), if required.

(For 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), a minimum TOEFL score of 600 on paper-based, 250 on computer-based test or 100 on an internet-based test (IBT), with each component score not less than 20, is required.)

The Department admissions committee announces its selections by mid-March.

A number of teaching assistantships are available to graduate students in the Department. Applicants who wish to be considered for an assistantship, a McGill Recruitment Fellowship, or for Differential Fee Waivers (for international students) should include a note to that effect with their applications. For information regarding a variety of other fellowship programs, see the "Graduate Fellowships and Awards" section of the Graduate and Postdoctoral Studies Calendar.

Application information is available on the Department website.

4.5 Program Requirements

M.A. Degree
The purpose of the M.A. program is to provide advanced-level training in anthropology and to prepare students for research at the Ph.D. level.

M.A. Degree with Thesis (48 credits)
The master’s degree with thesis is a 48-credit program: 4 courses (12 credits) and the M.A. thesis (36 credits).

The student's program of work, which is based on his/her research interests, is developed in consultation with the student's supervisor and the two other members of his or her advisory committee. Students are required to take four courses in the form of seminars and/or tutorials. The set of four courses should be directed toward and converge in the thesis research. M.A. thesis research may take the form of fieldwork but a library thesis is strongly advised so that students can proceed more rapidly to the Ph.D.
M.A. in Anthropology (Thesis) (48 credits)

Required Courses (12 credits)
ANTH 694 (6) M.A. Thesis Tutorial 1
ANTH 695 (6) M.A. Thesis Tutorial 2

Complementary Courses (12 credits)
12 credits of courses to be determined by the student’s area of study.

Thesis Component - Required (24 credits)
ANTH 699 (24) M.A. Thesis

M.A. in Anthropology (Thesis) – Development Studies Option/Concentration (48 credits)

The Development Studies Option (DSO) is a cross-disciplinary M.A. program offered as an option within existing M.A. programs in the departments of Geography, History, Political Science, Anthropology, Economics, and Sociology. This thesis option is open to master's students specializing in development studies. Students enter through one of the participating departments and must meet the M.A. requirements of that unit. Students will take an interdisciplinary seminar and a variety of graduate-level courses on international development issues. The M.A. thesis must be on a topic relating to development studies, approved by the DSO coordinating committee.

Required Courses (15 credits)
ANTH 694 (6) M.A. Thesis Tutorial 1
ANTH 695 (6) M.A. Thesis Tutorial 2
INTD 657 (3) Development Studies Seminar

Complementary Courses (9 credits)
9 credits of courses at the 500 level or higher to be determined by the student’s area of study.

Thesis Component - Required (24 credits)
ANTH 699 (24) M.A. Thesis

M.A. in Anthropology (Thesis) – Environment Option/Concentration (48 credits)

Required Courses (12 credits)
ANTH 694 (6) M.A. Thesis Tutorial 1
ENVR 610 (3) Foundations of Environmental Policy
ENVR 650 (1) Environmental Seminar 1
ENVR 651 (1) Environmental Seminar 2
ENVR 652 (1) Environmental Seminar 3

Complementary Courses (12 credits)
9 credits of Anthropology seminars and/or tutorials at the 500 level or higher which should be directed toward and converge in the thesis research.
3 credits from:
ENVR 519 (3) Global Environmental Politics
ENVR 544 (3) Environmental Measurement and Modelling
ENVR 580 (3) Topics in Environment 3
ENVR 611 (3) The Economy of Nature
ENVR 620 (3) Environment and Health of Species
ENVR 622 (3) Sustainable Landscapes
ENVR 630 (3) Civilization and Environment 1
ENVR 680 (3) Topics in Environment 4
or another graduate course recommended by the advisory committee and approved by the Environment Option Committee.

Thesis Component - Required (24 credits)
ANTH 699 (24) M.A. Thesis

Anthropology Complementary Course List
ANTH 551 (3) Advanced Topics: Archaeological Research
ANTH 555 (3) Advanced Topics in Ethnology
ANTH 602 (3) Theory 1
ANTH 603 (3) Theory 2
ANTH 605 (3) Culture Area
ANTH 607D1/D2 (6) Proseminar in Archaeology
ANTH 609D1/D2 (6) Proseminar in Anthropology
ANTH 610 (3) Social Organization
ANTH 611 (3) Research Design
ANTH 614 (3) Economic Anthropology 1
ANTH 615 (3) Seminar in Medical Anthropology
ANTH 616 (3) Political Anthropology 1
ANTH 625 (3) Cultural Ecology
ANTH 631 (3) Symbolic Anthropology 1
ANTH 634 (3) Anthropology of Development 1
ANTH 635 (3) Anthropology of Development 2
ANTH 640 (3) Psychological Anthropology 1
ANTH 648 (3) Structural Anthropology
ANTH 652 (3) Anthropology and Gender
ANTH 660 (3) Research Methods
ANTH 665 (3) Quantitative Methods
ANTH 670 (3) Archaeological Theory 1
ANTH 671 (3) Archaeological Theory 2
ANTH 673 (3) Archaeological Field Methods
ANTH 676 (3) Archaeological Area
ANTH 678 (3) Ethnohistory
ANTH 680 (3) Tutorial Reading 1
ANTH 681 (3) Tutorial Reading 2
ANTH 682 (3) Tutorial Reading 3
ANTH 683 (3) Tutorial Reading 4
ANTH 684 (3) Tutorial Reading 5
ANTH 702 (3) Advanced Anthropological Theory
ANTH 760 (3) Advanced Anthropological Methods
ANTH 770 (3) Advanced Archaeological Theory
ANTH 780 (3) Reading and Research 1
ANTH 781 (3) Reading and Research 2

M.A. in Anthropology (Thesis) – Gender and Women’s Studies Option/Concentration (48 credits)

The Graduate Option in Gender and Women’s Studies is an interdisciplinary program for students who meet the degree requirements in Anthropology who wish to earn 6 credits of approved coursework focusing on gender and women’s studies, and issues in feminist research and methods. The thesis must be on a topic centrally related to gender and/or women’s studies.

Required Courses (15 credits)
WMST 601 (3) Feminist Theories and Methods
ANTH 694 (6) M.A. Thesis Tutorial 1
ANTH 695 (6) M.A. Thesis Tutorial 2

Complementary Courses (9 credits)
6 credits of coursework in Anthropology at the 600 level.
3 credits of course work at the M.A. level relating to gender/women’s studies, which may be taken outside the department
OR
ANTH 615 (3) Seminar in Medical Anthropology

Thesis Component - Required (24 credits)
ANTH 699 (24) M.A. Thesis

M.A. Degree with Research Paper (45 credits)
(not offered in 2009-10)

The master's degree with research paper is a 45-credit program: 5 courses (15 credits), a Proseminar (6 credits) and the research paper (24 credits).

The student's program of work is developed in consultation with the student's supervisor and the two other members of his or her advisory committee. It consists of: five courses (seminars or tutorials), only one of which is optional, a research paper proposal and the research paper. They must also attend the Proseminar.

The research paper will normally be based on library research but can involve limited and preferably local fieldwork. The research paper should demonstrate the student's ability to define a problem, place it in a theoretical and factual context, collect and analyze data, and write up a report.
M.A. Degree in Medical Anthropology (48 credits)
The M.A. program in Medical Anthropology is given jointly by the Department of Anthropology and the Department of Social Studies of Medicine (SSOM). For additional information, including seminar offerings, please refer to the SSOM section.

The program is open to students with backgrounds in the social sciences, the medical professions, or the medical sciences. The M.A. degree is awarded by the Anthropology Department and admission is granted by a joint admissions committee made up of representatives from Anthropology and SSOM.

M.A. in Medical Anthropology (Thesis) (48 credits)

Required Courses (42 credits)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>HSSM 605</td>
<td>(3) Medical Anthropology</td>
</tr>
<tr>
<td>ANTH 615</td>
<td>(3) Seminar in Medical Anthropology</td>
</tr>
<tr>
<td>ANTH 694</td>
<td>(6) M.A. Thesis Tutorial 1</td>
</tr>
<tr>
<td>ANTH 695</td>
<td>(6) M.A. Thesis Tutorial 2</td>
</tr>
<tr>
<td>ANTH 699</td>
<td>(24) M.A. Thesis</td>
</tr>
</tbody>
</table>

Complementary Courses (6 credits)

Two Anthropology courses.

Special M.A. with Research Paper

This course of study is taken by students who lack a strong academic background in anthropology. These students are required to take eight courses (24 credits), including two seminars in Medical Anthropology (HSSM 605, ANTH 615) and at least five additional graduate courses in anthropology (Theory 1 and Research Methods are recommended). In addition, students are required to write a research paper.

Ph.D. Degree

The purpose of the Ph.D. program is to enable a student to make an original contribution to anthropological research in the form of a doctoral thesis. This must be based on a comprehensive understanding of prior research relevant to the topic investigated.

All requirements for the M.A. must be completed. Students holding an M.A. from another discipline may be requested to take seminars covering deficiencies in their previous training.

Candidates must (1) pass a language exam; (2) demonstrate comprehensive understanding of prior research in three subfields of anthropology through the successful completion of three courses; these courses are the Ph.D. Tutorials listed below; (3) submit and orally defend a research proposal; and (4) carry out field research and submit an original thesis for examination and oral defence.

1) A language examination, normally French, must be passed before an oral examination of the research proposal may be scheduled. Francophone students can satisfy the language requirement by demonstrating competency in English. The purpose of the language requirement is to ensure that the student has access to anthropological literature in at least two languages. Under special circumstances, a language other than English or French may be substituted, provided that there is sufficient anthropological literature on the student's research topic in that language.

2) Within the first year of Ph.D. study, students will select a thesis supervisor and at least two other thesis committee members. One of the latter may be from outside the Department. The committee as a whole helps the student to develop a topic for research, to learn the state of the art regarding the topic, and to write a research proposal. To ensure that students understand prior research, they must define three subfields which intersect with the thesis topic. One of these subfields is usually the literature on the geographic region where fieldwork will be carried out. One or more committee members will tutor the student in each selected subfield, and the student will prepare a bibliography of works read and discussed as well as a concise evaluation of the material covered in each. This written work will demonstrate understanding of prior research in each subfield.

3) The thesis proposal is also prepared in consultation with the committee members and under the direction of the thesis supervisor. It contains a brief review of the literature and controversies in the three relevant subfields, and a discussion of the proposed research (background, methods and hypotheses to be tested). When the proposal is finished, it must be read and approved by all members of the committee before it is submitted for oral examination. Copies of the proposal and of the bibliographies relating to the three subfields must be made available to all professors in the Department at least one week before the hearing.

The oral examination of the proposal and the three subfields is open to all staff and students. The first part of the examination will explore the student's general understanding of the three subfields selected. In the second part, the student may be questioned on the merits of any part of the proposal: theoretical assumptions, hypotheses, methods, understanding of the literature.

4) If the proposal is passed, the student will then carry out field research and write a thesis. Thesis drafts are read and commented on by the thesis committee. When the thesis is ready for examination, it is submitted to Graduate and Postdoctoral Studies, which appoints an internal examiner (usually from within the Department) and an external examiner (an acknowledged authority in the field from outside the university). If both examiners approve the thesis, an oral defence is arranged before a committee appointed by GPS.

Ph.D. in Anthropology: Neotropical Environment

All new Neotropical Environment students will be encouraged to spend the month of August (prior to September admission) in Panama to take their first core course and familiarize themselves with the country.

If admitted to Ph.D. 2:

Required Courses (15 credits)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>ANTH 700</td>
<td>(0) Ph.D. Preliminary Examination</td>
</tr>
<tr>
<td>ANTH 790</td>
<td>(3) Ph.D. Tutorial 1</td>
</tr>
<tr>
<td>ANTH 791</td>
<td>(3) Ph.D. Tutorial 2</td>
</tr>
<tr>
<td>ANTH 792</td>
<td>(3) Ph.D. Tutorial 3</td>
</tr>
<tr>
<td>BIOL 640</td>
<td>(3) Tropical Biology and Conservation</td>
</tr>
<tr>
<td>ENVR 610</td>
<td>(3) Foundations of Environmental Policy</td>
</tr>
</tbody>
</table>

Language: examination (besides English) that is appropriate for the student's research.

Complementary Courses (3 credits)

3 credits, at the 500 level or higher, deemed suitable by the student's supervisor, and pre-approved by the Neotropical Environment Director.

If admitted to Ph.D. 1:

Required Courses (48 credits)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH 602</td>
<td>(3) Theory 1</td>
</tr>
<tr>
<td>ANTH 605</td>
<td>(3) Culture Area</td>
</tr>
<tr>
<td>ANTH 609</td>
<td>(6) Proseminar in Anthropolgy</td>
</tr>
<tr>
<td>ANTH 611</td>
<td>(3) Research Design</td>
</tr>
<tr>
<td>ANTH 660</td>
<td>(3) Research Methods</td>
</tr>
<tr>
<td>ANTH 665</td>
<td>(3) Quantitative Methods</td>
</tr>
<tr>
<td>ANTH 685</td>
<td>(3) Research Tutorial 1</td>
</tr>
<tr>
<td>ANTH 686</td>
<td>(3) Research Tutorial 2</td>
</tr>
<tr>
<td>ANTH 700</td>
<td>(0) Ph.D. Preliminary Examination</td>
</tr>
<tr>
<td>ANTH 702</td>
<td>(3) Advanced Anthropolgical Theory</td>
</tr>
<tr>
<td>ANTH 760</td>
<td>(3) Advanced Anthropological Methods</td>
</tr>
<tr>
<td>ANTH 790</td>
<td>(3) Ph.D. Tutorial 1</td>
</tr>
<tr>
<td>ANTH 791</td>
<td>(3) Ph.D. Tutorial 2</td>
</tr>
<tr>
<td>ANTH 792</td>
<td>(3) Ph.D. Tutorial 3</td>
</tr>
<tr>
<td>BIOL 640</td>
<td>(3) Tropical Biology and Conservation</td>
</tr>
<tr>
<td>ENVR 610</td>
<td>(3) Foundations of Environmental Policy</td>
</tr>
</tbody>
</table>

Language: examination (besides English) that is appropriate for the student's research.
Complementary Courses (3 credits)
3 credits, at the 500 level or higher, deemed suitable by the student’s supervisor, and pre-approved by the Neotropical Environment Director.

Ph.D. in Anthropology: Sociocultural Stream
If admitted to Ph.D. 2:
Required Courses (9 credits)
ANTH 700 (0) Ph.D. Preliminary Examination
ANTH 790 (3) Ph.D. Tutorial 1
ANTH 791 (3) Ph.D. Tutorial 2
ANTH 792 (3) Ph.D. Tutorial 3
Language: examination (usually French or English). Students must have knowledge in at least two languages.

If admitted to Ph.D. 1:
Required Courses (42 credits)
ANTH 602 (3) Theory 1
ANTH 605 (3) Culture Area
ANTH 609 (6) Proseminar in Anthropology
ANTH 611 (3) Research Design
ANTH 660 (3) Research Methods
ANTH 665 (3) Quantitative Methods
ANTH 685 (3) Research Tutorial 1
ANTH 686 (3) Research Tutorial 2
ANTH 700 (0) Ph.D. Preliminary Examination
ANTH 702 (3) Advanced Anthropological Theory
ANTH 760 (3) Advanced Anthropological Methods
ANTH 790 (3) Ph.D. Tutorial 1
ANTH 791 (3) Ph.D. Tutorial 2
ANTH 792 (3) Ph.D. Tutorial 3
Language: examination (usually French or English). Students must have knowledge in at least two languages.

Complementary Courses (3 credits)
3 credits, at the 500 level or higher, chosen from within the Department.

4.6 Courses
Students preparing to register should consult Class Schedule on the web at www.mcgill.ca/student-records/register/ class-schedule for the most up-to-date list of courses available; courses may have been added, rescheduled or cancelled after this Calendar was published. Class Schedule lists courses by term and includes days, times, locations, and names of instructors.

Courses with numbers ending D1 and D2 are taught in two consecutive terms (most commonly Fall and Winter).
The course credit weight is given in parentheses after the title.

ANTH 500 CHINESE DIVERSITY AND DISPARA. (3) (Winter)
(Restrictions: Reserved for U3 Anthropology undergraduate students or graduate students, any other students by permission of instructor.) (Enrolment Limit: 25 students.) Explores ethnic diversity within mainland China, as well as the diversity of Chinese cultures of diaspora, living outside the mainland, often as minorities subject to other dominant cultures.

ANTH 511 COMPUTATIONAL APPROACHES TO PREHISTORY. (3) (Winter) (Prerequisites: ANTH 357 or ANTH 358.) (Restriction: Restricted to U3 and graduate students in the Anthropology Department.) Covers the application of computational methods to archaeological problems and the modeling and simulation of prehistoric populations.

ANTH 512 POLITICAL ECOLOGY. (3) (Winter) Historical, theoretical and methodological development of political ecology as a field of inquiry on the interactions between society and environment, in the context of conflicts over natural resources.

ANTH 540 TOPICS IN ANTHROPOLOGICAL THEORY. (3) (Winter) (Restriction: This course is restricted to U3 Honours students in the Anthropology Department or with permission of the instructor.) Examination and discussion of topics of current theoretical interest.

ANTH 551 ADVANCED TOPICS: ARCHAEOLOGICAL RESEARCH. (3) (Fall) Examination and discussion of topics of current theoretical or methodological interest in archaeology. Topics will be announced at the beginning of term.

ANTH 555 ADVANCED TOPICS IN ETHNOLOGY. (3) (Winter) (Restriction: Honours students at the U3 level in the Anthropology Department or with permission of instructor) Examination and discussion of topics of current theoretical or methodological interest in ethology. Topics will be announced at the beginning of term.

ANTH 575 CONCEPTS OF RACE. (3) (Winter) (Prerequisites: ANTH 201, or ANTH 202, or ANTH 203, and ANTH 352 or ANTH 359.) (Restriction: U3 students and graduate students in Anthropology programs.) Examination of the evolution of the idea of race within anthropology, and the impact which the discipline's debates have had on society.

ANTH 602 THEORY 1. (3)

ANTH 602D1 (1.5), ANTH 602D2 (1.5) THEORY 1. (Students must register for both ANTH 602D1 and ANTH 602D2) (No credit will be given for this course unless both ANTH 602D1 and ANTH 602D2 are successfully completed in consecutive terms) (ANTH 602D1 and ANTH 602D2 together are equivalent to ANTH 602)

ANTH 603 THEORY 2. (3)

ANTH 607D1 (3), ANTH 607D2 (3) PROSEMINAR IN ARCHAEOLOGY. (Students must register for both ANTH 607D1 and ANTH 607D2) (No credit will be given for this course unless both ANTH 607D1 and ANTH 607D2 are successfully completed in consecutive terms)

ANTH 609D1 (3), ANTH 609D2 (3) PROSEMINAR IN ANTHROPOLOGY. (Students must register for both ANTH 609D1 and ANTH 609D2) (No credit will be given for this course unless both ANTH 609D1 and ANTH 609D2 are successfully completed in consecutive terms) (ANTH 609D1 and ANTH 609D2 together are equivalent to ANTH 609)

ANTH 614 ECONOMIC ANTHROPOLOGY 1. (3)

ANTH 615 SEMINAR IN MEDICAL ANTHROPOLOGY. (3)

ANTH 616 POLITICAL ANTHROPOLOGY 1. (3)

ANTH 625 CULTURAL ECOLOGY. (3)

ANTH 631 SYMBOLIC ANTHROPOLOGY 1. (3)

ANTH 634 ANTHROPOLOGY OF DEVELOPMENT 1. (3)

ANTH 640 PSYCHOLOGICAL ANTHROPOLOGY 1. (3)

ANTH 648 STRUCTURAL ANTHROPOLOGY. (3)

ANTH 652 ANTHROPOLOGY AND GENDER. (3)

ANTH 660 RESEARCH METHODS. (3)

ANTH 665 QUANTITATIVE METHODS. (3)

ANTH 670 ARCHAEOLOGICAL THEORY 1. (3)

ANTH 671 ARCHAEOLOGICAL THEORY 2. (3)

ANTH 676 ARCHAEOLOGICAL AREA. (3)

ANTH 678 ETHNOSTORY. (3)

ANTH 680 TUTORIAL READING 1. (3)

ANTH 681 TUTORIAL READING 2. (3)

ANTH 682 TUTORIAL READING 3. (3)

ANTH 683 TUTORIAL READING 4. (3)

ANTH 684 TUTORIAL READING 5. (3)

ANTH 685 RESEARCH TUTORIAL 1. (3)

ANTH 686 RESEARCH TUTORIAL 2. (3)

ANTH 690 RESEARCH PAPER 1. (6)

ANTH 691 RESEARCH PAPER 2. (6)

ANTH 692 RESEARCH PAPER 3. (6)
ANTH 693 RESEARCH PAPER 4. (6)  
ANTH 694 M.A. THESIS TUTORIAL 1. (6)  
ANTH 695 M.A. THESIS TUTORIAL 2. (6)  
ANTH 696 M.A. RESEARCH PAPER. (15)  
ANTH 699 M.A. THESIS. (24)  
ANTH 699D1 (12), ANTH 699D2 (12) M.A. THESIS. (Students must register for both ANTH 699D1 and ANTH 699D2) (No credit will be given for this course unless both ANTH 699D1 and ANTH 699D2 are successfully completed in consecutive terms) (ANTH 699D1 and ANTH 699D2 together are equivalent to ANTH 699)  
ANTH 700 PH.D. PRELIMINARY EXAMINATION. (0)  
ANTH 700D1 (3), ANTH 700D2 (3) PH.D. PRELIMINARY EXAMINATION. (Students must register for both ANTH 700D1 and ANTH 700D2) (No credit will be given for this course unless both ANTH 700D1 and ANTH 700D2 are successfully completed in consecutive terms) (ANTH 700D1 and ANTH 700D2 together are equivalent to ANTH 700)  
ANTH 760 ADVANCED ANTHROPOLOGICAL METHODS. (3)  
ANTH 780 READING AND RESEARCH 1. (3)  
ANTH 781 READING AND RESEARCH 2. (3)  
ANTH 790 PH.D. TUTORIAL 1. (3)  
ANTH 790D1 (1.5), ANTH 790D2 (1.5) PH.D. TUTORIAL 1. (Students must register for both ANTH 790D1 and ANTH 790D2) (No credit will be given for this course unless both ANTH 790D1 and ANTH 790D2 are successfully completed in consecutive terms) (ANTH 790D1 and ANTH 790D2 together are equivalent to ANTH 790)  
ANTH 791 PH.D. TUTORIAL 2. (3)  
ANTH 791D1 (1.5), ANTH 791D2 (1.5) PH.D. TUTORIAL 2. (Students must register for both ANTH 791D1 and ANTH 791D2) (No credit will be given for this course unless both ANTH 791D1 and ANTH 791D2 are successfully completed in consecutive terms) (ANTH 791D1 and ANTH 791D2 together are equivalent to ANTH 791)  
ANTH 792 PH.D. TUTORIAL 3. (3)  
ANTH 792D1 (1.5), ANTH 792D2 (1.5) PH.D. TUTORIAL 3. (Students must register for both ANTH 792D1 and ANTH 792D2) (No credit will be given for this course unless both ANTH 792D1 and ANTH 792D2 are successfully completed in consecutive terms) (ANTH 792D1 and ANTH 792D2 together are equivalent to ANTH 792)  

5 Architecture  
School of Architecture  
Macdonald-Harrington Building  
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Montreal, QC H3A 2K8  
Canada  
Telephone: 514-398-6700  
Fax: 514-398-7372  
Website: www.mcgill.ca/architecture  
Director — Michael Jemtrud  
Graduate Program Directors  
Ricardo L. Castro (professional program)  
Annmarie Adams (post-professional program)  

5.1 Staff  
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)  
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  
Annmarie Adams; B.A.(McG.), M.Arch., Ph.D.(Calif.), M.R.A.I.C.  
(William C. Macdonald Professor of Architecture)  
Avi Friedman; B.Arch.(Technion), M.Arch.(McG.), Ph.D.(Montr.), O.A.Q., I.A.A.  
(Saidy 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.), M.R.A.I.C.  
David Covo; B.Sc.(Arch.), B.Arch.(McG), F.R.A.I.C., O.A.Q.  
Robert Mellin; B.Arch., M.Sc.(Arch.(Penn.), M.Arch.(McG.), M.Sc., Ph.D.(Penn.), F.R.A.I.C., N.A.A.  
Pieter Sijpkes; B.Sc.(Arch.), B.Arch.(McG)  
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)  
Planetary Society Visiting Professor in Architecture  
Torben Berns; B.Arch.(Car.), M.Arch., Ph.D.(McG).  
Course Lecturers  
Tom Balaban, Nancy Dunton, Leila Farah, Andrew MacElwee, Sybil McKenna, Suresh Perera, Pierina Saia  
Adjacent Professors  
Howard Davies, François Emond, Julia Gersovitz, Richard Klopp, Phyllis Lambert, Joanna Nash, Mark Poddubiuk, Conor Sampson, Jozef Zorko  

5.2 Programs Offered  
M.Arch, (Professional) (Non-Thesis), M.Arch, (Post-professional) (Non-Thesis), Graduate Diploma in Housing, Ph.D.  
The professional M.Arch. program is accredited by the Canadian Architectural Certification Board (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 Post-professional M.Arch. and Ph.D. programs: Architectural History and Theory, Cultural Mediations and Technology, and Urban Design.  
Information concerning the duration of programs, documents required of applicants, etc., may be obtained from: profdegree.architecture@mcgill.ca (B.Sc. (Arch.) and M.Arch. (Professional)), postprofmaster.architecture@mcgill.ca (B.Sc. (Professional) and Graduate Diploma in Housing), or phd.architecture@mcgill.ca (Ph.D.).  
Architectural Certification in Canada  
In Canada, all provincial associations recommend a degree from an accredited professional degree program as a prerequisite for licensure. The Canadian Architectural Certification Board (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. Masters 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 for 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.

### 5.3 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.II 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.

### 5.4 Application Procedures

**Dates for Guaranteed Consideration**

For dates for guaranteed consideration, please consult the following website: [www.mcgill.ca/gradapplicants/programs](http://www.mcgill.ca/gradapplicants/programs). Then select the appropriate program.

Note: We are not willing to consider any applications to be admitted for the Summer term.

**Professional Master of Architecture:**

McGill B.Sc.(Arch.) Graduates:

2. A non-refundable application fee of CAD$100.
3. A comprehensive portfolio (8½” x 11” format) that includes the following:
   - selected work from all previous studios (please use Studio Project Description Form*)
   - 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).
4. Summary of work experience (please use Work Experience Report form*). A minimum of six (6) months is required.

Others:

2. A non-refundable application fee of CAD$100.

3. A comprehensive portfolio (8½” x 11” format) that includes the following:
   - selected work from all previous design studios (please use Studio Project Description Form*)
   - 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 objects; please identify the architect(s) and your own roles in each project illustrated).
4. Summary of work experience (please use Work Experience Report form*). A minimum of six (6) months is required.
5. Two sets of official transcripts sent to the School of Architecture directly by the registrars of all universities attended.
6. Two confidential letters of reference sent directly by the referees to the School of Architecture (please use Confidential Report on Applicant form*).
7. Course calendar descriptions of previous college and/or university studies.
8. Completed Program Comparison Chart*.
9. 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. Before acceptance, 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. An institutional version of the TOEFL is not acceptable. Applications will not be considered if a TOEFL or IELTS test result is not available. For the TOEFL, a minimum score of 550 is required on the paper-based test (PBT), a minimum score of 213 is required on the computer-based test (CBT), or a minimum overall score of 86 with each component score (i.e. reading, writing, speaking, listening) not less than 20 is required on the internet-based test (IBT). (The TOEFL Institution Code for McGill University is 0935.) For the IELTS, a minimum overall band score of 6.5 is required. Please refer to the Graduate admission website: [www.mcgill.ca/gradapplicants](http://www.mcgill.ca/gradapplicants).

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

**Post-professional programs:**

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

2. A non-refundable application fee of CAD$100, payable by credit card (Visa or MasterCard) after completing the online application.
3. Two sets of official transcripts sent to the School of Architecture directly by the registrars of all universities previously attended.
4. Two confidential letters of reference sent directly by the referees to the School of Architecture (please use Confidential Report on Applicant form*).
5. 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. Ideally, the statement should also name the potential advisor and articulate the relationship between the proposed
dissertation research and the scholarship of the faculty member.

6. 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.

7. At least one example of a report or paper (e.g., published work, article or essay) written by the applicant.

8. 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. Before acceptance, 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. An institutional version of the TOEFL is not acceptable. Applications will not be considered if a TOEFL or IELTS test result is not available. For the TOEFL, a minimum score of 550 is required on the paper-based test (PBT), a minimum score of 213 is required on the computer-based test (CBT), or a minimum overall score of 86 with each component score (i.e., reading, writing, speaking, listening) not less than 20 is required on the internet-based test (iBT). (The TOEFL Institution Code for McGill University is 0935.) For the IELTS, a minimum overall band score of 6.5 is required. Please refer to the Graduate admission website: www.mcgill.ca/gradapplicants/apply/prepare/requirements/english.

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

### 5.5 Program Requirements

#### M.Arch. (Professional)

M.Arch. (Non-Thesis) – Design Studio (45 credits)

The Master of Architecture (Professional) Non-Thesis – Design Studio concentration requires the equivalency of the McGill B.Sc.(Arch.) degree for admission and completion of requirements that lead to an accredited professional M.Arch. degree. For further information regarding admission eligibility and requirements, please see: www.mcgill.ca/architecture/programs/professional.

This option requires a minimum of 3 terms (45 credits) for completion according to an intensive design studio-based curriculum. This option is a 3-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 567 (6) Architectural Design 1
- ARCH 573 (6) Architectural Design 2*
- ARCH 574 (3) Professional Practice
- ARCH 577 (6) Architectural Design 3
- ARCH 585 (3) Advanced Construction
- ARCH 683 (3) Field Sketching

* As of 201001, ARCH 673 Architectural Design 2 (9 cr.) will have a credit count of 6.

#### Complementary Courses (minimum 9 credits)

Group A:

- 6 credits of advanced level seminars must be chosen from the following:
  
- ARCH 524 (3) Critical Design Strategies
- ARCH 525 (3) Seminar on Analysis and Theory
- ARCH 531 (3) Architectural Intentions Vitruvius - Renaissance
- ARCH 532 (3) Origins of Modern Architecture
- ARCH 540 (3) Selected Topics in Architecture 1
- ARCH 541 (3) Selected Topics in Architecture 2
- ARCH 684 (3) Contemporary Theory 1

- ARCH 685 (3) Contemporary Theory 2

Group B:

- 3 credits chosen from the following:
  
- 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 522 (3) History of Domestic Architecture in Quebec
- ARCH 523 (3) Significant Texts and Buildings
- ARCH 524 (3) Critical Design Strategies
- 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 Architecture
- 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 555 (2) Environmental Acoustics
- ARCH 679 (3) Writing in Architecture*
- ARCH 684 (3) Contemporary Theory 1
- ARCH 685 (3) Contemporary Theory 2

* As of 201009, ARCH 679 Architectural Journalism (1 cr.) will be called Writing in Architecture and will have a credit count of 3.

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

#### Elective Courses (maximum 6 credits)

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

#### M.Arch. (Professional)

M.Arch. (Non-Thesis) – Design Studio - Directed Research (60 credits)

The Master of Architecture (Professional) Non-Thesis – Design Studio Directed Research concentration requires the equivalency of the McGill B.Sc.(Arch.) degree for admission and completion of requirements that lead to an accredited professional degree, M.Arch. (Professional). For further information regarding admission eligibility and requirements, please see: www.mcgill.ca/architecture/programs/professional.

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 which allows for a transition to a PhD 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 (36 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
- ARCH 678 (3) Advanced Construction
- ARCH 683 (3) Field Sketching

* As of 201001, ARCH 673 Architectural Design 2 (9 cr.) will have a credit count of 6.

#### Complementary Courses (minimum 15 credits)

Group A:

- 6 credits of advanced level seminars from the following, with approval from an adviser:
  
- ARCH 524 (3) Critical Design Strategies
- ARCH 525 (3) Seminar on Analysis and Theory
- ARCH 531 (3) Architectural Intentions Vitruvius - Renaissance
ARCH 532 (3) Origins of Modern Architecture
ARCH 630 (3) Housing Seminar 1
ARCH 631 (3) Housing Seminar 2
ARCH 684 (3) Contemporary Theory 1
ARCH 685 (3) Contemporary Theory 2
URBD 612 (3) Seminar 1: Analysis and Concept.
URBD 614 (3) Seminar 2: Project Development

Group B:
9 credits chosen from the following:
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 522 (3) History of Domestic Architecture in Quebec
ARCH 523 (3) Significant Texts and Buildings
ARCH 524 (3) Critical Design Strategies
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 Arch 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 555 (2) Environmental Acoustics
ARCH 630 (3) Housing Seminar 1
ARCH 631 (3) Housing Seminar 2
ARCH 679 (3) Writing in Architecture*
ARCH 680 (3) Field Sketching
ARCH 684 (3) Contemporary Theory 1
ARCH 685 (3) Contemporary Theory 2
ARCH 688 (3) Directed Research 1
ARCH 689 (3) Directed Research 2
URBD 612 (3) Seminar 1: Analysis and Concept
URBD 614 (3) Seminar 2: Project Development
* As of 201009, ARCH 679 Architectural Journalism (1 cr.) will be called Writing in Architecture and will have a credit count of 3.

Note: Courses taken are to be used to fulfill one group only. Unless otherwise indicated, the above courses are restricted to students in the professional area.

Elective Courses (maximum 9 credits)
A maximum of 9 credits may be completed outside the School of Architecture (500- or 600-level electives) with the approval of an assigned faculty advisor.

ARCHITECTURE – POST-PROFESSIONAL PROGRAMS
The Post-professional masters 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 course work, to be completed in the first two terms, and a 15-credit project report 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 twelve calendar months in the program.

M.Arch. (Post-professional)
M.Arch. (Non-Thesis) – Affordable Homes (45 credits)
(45 credits)

Required Courses (24 credits)
ARCH 623 (3) Project Preparation
ARCH 627 (3) Research Methods for Architects
ARCH 630 (3) Housing Seminar 1
ARCH 631 (3) Housing Seminar 2
ARCH 645 (6) Housing Project 1
ARCH 646 (6) Housing Project 2

Complementary Courses (6 credits)
Two 3-credit courses at the 500 level or higher

Project Component - Required (15 credits)
ARCH 628 (15) Housing Project Report

M.Arch. (Post-professional)
M.Arch. (Non-Thesis) – Architectural History and Theory (45 credits)

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 History Seminar 1
ARCH 653 (4) Architectural History Seminar 2

Project Component - Required (15 credits)
ARCH 624 (15) History and Theory Project

M.Arch. (Post-professional)
M.Arch. (Non-Thesis) – Cultural Mediations and Technology (45 credits)

Required Courses (33 credits)
ARCH 623 (3) Project Preparation
ARCH 627 (3) Research Methods for Architects
ARCH 629 (15) Cultural Mediations and Technology Research Report
ARCH 647 (6) Cultural Mediations and Technology Studio
ARCH 684 (3) Contemporary Theory 1
ARCH 685 (3) Contemporary Theory 2

Complementary Courses (12 credits)
12 credits of courses at the 500 level or higher, approved by an adviser.

M.Arch. (Post-professional)
M.Arch. (Non-Thesis) – Minimum Cost Housing (45 credits)
(45 credits)

Required Courses (18 credits)
ARCH 623 (3) Project Preparation
ARCH 627 (3) Research Methods for Architects
ARCH 630 (3) Housing Seminar 1
ARCH 631 (3) Housing Seminar 2
ARCH 645 (6) Housing Project 1

Complementary Courses (12 credits)
Four 3-credit courses at the 500 level or higher

Project Component - Required (15 credits)
ARCH 628 (15) Housing Project Report

M.Arch. (Post-professional)
M.Arch. (Non-Thesis) – Urban Design (45 credits)
(45 credits)

Required Courses (21 credits)
ARCH 623 (3) Project Preparation
URBD 611 (6) Studio 1: Analysis and Concept
URBD 612 (3) Seminar 1: Analysis and Concept
URBD 613 (6) Studio 2: Project Development
URBD 614 (3) Seminar 2: Project Development
Complementary Courses (9 credits)
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
ARCH 550 (4) Urban Planning and Development
ARCH 627 (3) Research Methods for Architects
ARCH 630 (3) Housing Seminar 1
ARCH 631 (3) Housing Seminar 2
ARCH 652 (4) Architectural Theory Seminar 1
ARCH 653 (4) Architectural Theory Seminar 2
URBP 501 (2) Principles and Practice 1
URBP 505 (3) Geographic Information Systems
URBP 605 (3) Graduate Seminar
URBP 607 (3) Studio Course: Urban Planning
URBP 612 (3) History and Theory of Planning
URBP 614 (3) Urban Environmental Planning
URBP 617 (3) Selected Topics 2
URBP 618 (3) Selected Topics 3
URBP 619 (3) Land Use and Transportation Planning
URBP 621 (3) Theories of Urban Form
URBP 625 (2) Principles and Practice 2
URBP 628 (2) Principles and Practice 3
URBP 629 (3) Cities in a Globalizing World

Project Component - Required (15 credits)
URBD 615 (15) Urban Design Research Report

Ph.D.
Doctoral candidates must have their thesis proposal approved by their advisor (ARCH 700) before embarking on their research. A Thesis Advisory Committee is then struck and is responsible for monitoring the student’s research. For course number 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.

Graduate Diploma in Housing
(not offered in 2009-2010)
The Graduate Diploma in Housing is a two-term program of required and elective courses, which extends from September to April. Two options are offered, Affordable Homes and Minimum Cost Housing. A case study approach is used to solve problems related to design, site development, self-help housing, use of low-cost infrastructure components and systems, and the upgrading and integration of technology into undeveloped areas. Seminars cover various topics, and workshop/studio classes focus on design issues. Required courses are offered in the School, and electives may be taken in the School and in other departments. Candidates enrolled in the program must complete a minimum of 30 credits.

Graduate Diploma in Housing
(Affordable Homes) (30 credits)
(not offered in 2009-2010)

Required Courses (24 credits)
ARCH 528 (3) History of Housing
ARCH 529 (3) Housing Theory
ARCH 630 (3) Housing Seminar 1
ARCH 631 (3) Housing Seminar 2
ARCH 645 (6) Housing Project 1
ARCH 646 (6) Housing Project 2

Complementary Courses (6 credits)
Two approved 3-credit courses at the 500 level or higher.

Graduate Diploma in Housing
(Minimum Cost Housing) (30 credits)
(not offered in 2009-2010)

Required Courses (24 credits)
ARCH 528 (3) History of Housing
ARCH 529 (3) Housing Theory
ARCH 630 (3) Housing Seminar 1
ARCH 631 (3) Housing Seminar 2
ARCH 634 (6) Housing Report
ARCH 646 (6) Housing Project 2

Complementary Courses (6 credits)
Two approved 3-credit courses at the 500 level or higher.

5.6 Courses

Students preparing to register should consult the Class Schedule on the web at www.mcgill.ca/student-records/register/class-schedule for the most up-to-date list of courses available; courses may have been added, rescheduled or cancelled after this Calendar was published. Class Schedule lists courses by term and includes days, times, locations, and names of instructors.

The course credit weight is given in parentheses after the title.
★ Denotes courses taught only in alternate years.
☐ Denotes limited enrolment

ARCH 512 Architectural Modelling. (3) (2-1-6) (Prerequisites: ARCH 304 and ARCH 471 or equivalent.) (Restrictions: Not open to students who have taken ARCH 364.) Architectural modelling using advanced applications in digital media. Topics include: 3-D modelling and rendering; image editing; digital animation; hyper-text and the World Wide Web; issues of representation and methodology; comparison of publishing applications. Projects complement design studio courses and independent studies that are student or instructor initiated.

ARCH 514 Community Design Workshop. (4) (4-20-15) (Prerequisite: ARCH 202.) A design-build studio that engages community-based projects with identified needs and a requirement for intervention on real sites. Exploration of selected problems in architectural design and develop solutions from first concept to implementation on-site.

ARCH 515 Sustainable Design. (3) (3-0-6) (Prerequisite: ARCH 377 or permission of instructor.) This course will address sustainable design theory and applications in the built environment with students from a variety of fields (architecture, urban planning, engineering, sociology, environmental studies, economics, international studies). Architecture will provide the focus for environmental, socio-cultural and economic issues.

ARCH 519 Field Course Abroad. (3) (Summer) (Prerequisite: ARCH 304 or permission of instructor) (Restrictions: Limited enrolment; departmental permission required) (Note: Excursions to neighbouring sites of architectural interest) (This course in the Faculty of Engineering is open only to McGill students.) Advanced and comprehensive studies in-situ of key buildings, landscapes and urban settings; techniques of graphic documentations, analysis of physical configuration, constructional details and present use.

★ ARCH 520 Montreal: Urban Morphology. (3) (2-1-6) (Prerequisite: ARCH 251) (Given alternate years, alternating with ARCH 521) Historical, geographical, demographic, and regional evolution of the metropolis of Montreal. Topics include: important quartiers, the Montreal urban grid, industrialization, reform movements, geographical diversity, urban culture, local building techniques and materials. Basic concepts of urban morphology and their relationships to the contemporary urban context will be explored.
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★ ARCH 521 STRUCTURE OF CITIES. (3) (2-0-7) (Prerequisite: ARCH 202 or permission of instructor) (Given alternate years, alternating with ARCH 520) Nature, pattern and life of modern cities. Urban networks, special areas, problems and prospects.

ARCH 522 HISTORY OF DOMESTIC ARCHITECTURE IN QUEBEC. (3) (2-0-7) (Prerequisite: ARCH 251) (Restriction: Departmental permission required) The architecture of houses in Quebec from 1650 to the present. Distinguished buildings are reviewed from the point of view of form, style, siting and material, as influenced by climate, culture and architectural antecedents in France, England and the United States. The course material is presented through alternating bi-weekly lectures and seminars.

★ ARCH 523 SIGNIFICANT TEXTS AND BUILDINGS. (3) (2-0-7) (Prerequisite: ARCH 251) (Given alternate years, alternating with ARCH 524) (Restriction: Departmental permission required) Critical study of significant architectural thought since 1750 as it has been expressed in buildings and texts (treatises, manifestos, criticisms). A specific theme will be addressed every year to allow in-depth interpretations of the material presented and discussed.

★ ARCH 524 CRITICAL DESIGN STRATEGIES. (3) (2-0-7) (Prerequisite: ARCH 251) (Given alternate years, alternating with ARCH 523) (Restriction: Departmental permission required) Study of specific contemporary design practices with particular reference to their affinities with the development and current role of architectural criticism and its affinities with art, literature and philosophy.

★ ARCH 525 SEMINAR ON ANALYSIS AND THEORY. (3) (2-0-7) (Prerequisite: ARCH 202 or permission of instructor) (Given alternate years, alternating with ARCH 383) (Restriction: Departmental permission required) Analysis and evaluation of significant architectural projects with reference to contemporary architectural theories.

ARCH 526 PHILOSOPHY OF STRUCTURE. (3) (2-0-7) (Prerequisite: ARCH 202 or permission of Instructor) (Restriction: Not open to students who have taken ARCH 374) Philosophy of Structure aims to investigate structure in its broadest sense. The course is divided in two halves; the first one gives an overview of the development of theoretical structural frameworks such as mathematics and geometry, while the second one highlights physical structures constructed by nature (geology, turbulence), man or animals.

ARCH 527 CIVIC DESIGN. (3) (2-0-7) (Prerequisite: ARCH 378) Focus on form in buildings and their siting design in the urban setting.

ARCH 528 HISTORY OF HOUSING. (3) (2-0-7) (Prerequisite: ARCH 251 or permission of instructor) Indigenous housing both transient and permanent, from the standpoint of individual structure and pattern of settlements. The principal historic examples of houses including housing in the age of industrial revolution and contemporary housing.

ARCH 529 HOUSING THEORY. (3) (2-0-7) (Prerequisite: ARCH 528 or permission of instructor) A review of environmental alternatives in housing; contemporary housing and the physical and sociological determinants that shape it. Canadian housing.

ARCH 531 ARCHITECTURAL INTENTIONS VITRUVIUS - RENAISSANCE. (3) (2-0-7) (Prerequisite: ARCH 251) Architectural intentions embodied in buildings and writings of architects from antiquity to the Renaissance. Special emphasis is placed on the cultural connections of architecture to science and philosophy.

ARCH 532 ORIGINS OF MODERN ARCHITECTURE. (3) (2-0-7) (Prerequisite: ARCH 251) Examination of architectural intentions (theory and practice) in the European context (especially France, Italy and England), during the crucial period that marks the beginning of the modern era.

ARCH 534 ARCHITECTURAL ARCHIVES. (3) (3-0-6) (Prerequisites: ARCH 250 and ARCH 251 or equivalent.) (Restriction: Open only to architecture students.) Role of archives in architectural culture. Methods of development, documentation and communication. Formats of architectural representation. Problems inherent in the creation and preservation of architectural records, and access to them. Case studies based on 19th and 20th century archives in the John Bland Canadian Architecture Collection, and other collections.

★ ARCH 535 HISTORY OF ARCHITECTURE IN CANADA. (3) (2-0-7) (Prerequisite: ARCH 251 or permission of instructor) (Restriction: Not open to students who have taken ARCH 372) (Given alternate years, alternating with ARCH 536.) French, British and American influences in the history of Canadian architecture, with particular emphasis on the Eastern Provinces. Site visits and case studies.

★ ARCH 536 HERITAGE CONSERVATION. (3) (3-3-3) (Given alternate years, alternating with ARCH 535) (Site visits and case studies.) (Prerequisite: ARCH 251 or permission of instructor.) Historic attitudes and terminologies of conservation; historic research techniques. Restoration technology of building materials and principles of interior design in the 19th and 20th century; current preservation planning.

ARCH 540 SELECTED TOPICS IN ARCHITECTURE 1. (3) (2-0-7) A course to allow the introduction of new topics in Architecture as needs arise, by regular and visiting staff.

ARCH 541 SELECTED TOPICS IN ARCHITECTURE 2. (3) (2-0-7) A course to allow the introduction of new topics in Architecture as needs arise, by regular and visiting staff.

ARCH 550 URBAN PLANNING AND DEVELOPMENT. (3) (3-0-6) (Prerequisite: B.Sc.(Arch.) or permission of instructor) (Restriction: Not normally open to Urban Planning students) A survey of municipal, regional and provincial actions to guide urban development in Canada, with a particular emphasis on Montreal and Quebec. It also introduces students to concepts in real-estate development and highlights the relationship between developers and planners.

ARCH 554 MECHANICAL SERVICES. (2) (2-0-4) (Prerequisite: ARCH 405 or permission of instructor) Problems encountered in providing mechanical services in buildings. Physiological and environmental aspects of heat, ventilation and air conditions, estimation of heating and cooling loads and selection and specification of equipment. Sprinkler systems and plumbing. Construction problems produced by installation of this equipment.

ARCH 555 ENVIRONMENTAL ACOUSTICS. (2) (2-0-4) (Prerequisite: ARCH 405 or permission of instructor) Acoustics in architectural design, and in environmental control of buildings. Acoustical requirements in the design of auditoria such as theatres, lecture halls, opera houses, concert halls, churches, motion picture theatres, studios. Principles of noise and vibration control, sound insulating in building construction. Practical noise control in various types of buildings.

ARCH 602 URBAN DESIGN SEMINAR 1. (3) (3-0-6) (Restriction: Not open to students who have taken URBD 611.) Introduction to urban design and housing: general preoccupations, theoretical antecedents, epistemological foundations, and practical techniques pertinent to contemporary theory and practice.

ARCH 603 URBAN DESIGN PROJECT. (6) (6-1-11) (Prerequisites: ARCH 602 or URBD 602 (or equivalent course at Université de Montréal).) (Corequisite: ARCH 604) (Restrictions: Open only to students enrolled in the M.Arch. (Post-prof.) Urban Design and Housing option or the Maîtrise individualisée en développement urbain offert par Université de Montréal. Not open to students who have taken URBD 613.) Advanced concepts and methods used in urban design, focusing on epistemological debates, practical techniques, and philosophical concerns that shape contemporary theory and practice in the field.

ARCH 604 URBAN DESIGN SEMINAR 2. (3) (3-6-0) (Prerequisites: ARCH 602 or URBD 602 (or equivalent course at Université de Montréal).) (Restriction: Not open to students who have taken URBD 614.) Advanced concepts and methods used in urban design, focusing on epistemological debates, practical techniques, and philosophical concerns that shape contemporary theory and practice in the field.

ARCH 622 CRITICAL WRITING. (3) (2-1-6) Seminar to critically review an architectural topic.

ARCH 623 PROJECT PREPARATION. (3) (2-1-6) Guided background preparation for the project.
ARCH 624 History and Theory Project. (15) (0-15-30) Thematic, site-specific experimental design with an emphasis on process, including 1) survey/mapping and 2) preparation of text, drawings and models.

ARCH 627 Research Methods for Architects. (3) (2-0-7) (Restriction: Open only to students enrolled in the M.Arch. (Post-professional) programs.) An intensive course in research methods for students with professional training in architecture. Topics include how to set research questions, establish hypotheses, engage methodologies, produce literature reviews, organize fieldwork, and present findings.

ARCH 628 Housing Project Report. (15) (0-15-30) A supervised project report based on material developed by candidates in the project preparation course. It may include on-site explorations of housing projects, surveying and documentation, critical analysis, and creative mapping of the same, plus an evaluation report.

ARCH 629 Cultural Mediations and Technology Research Report. (15) (Prerequisite(s): ARCH 623, ARCH 627) (Restriction(s): Open only to students enrolled in the M.Arch. (Post-Professional) Non-Thesis - Cultural Mediation & Technology program.) An individual research report addressing inter-disciplinary concerns.

ARCH 630 Housing Seminar 1. (3) (2-0-7) Strategies for affordable and low-cost housing. Investigation of cost-saving measures both at urban and dwelling unit levels. An analysis of recent low-cost housing projects.

ARCH 631 Housing Seminar 2. (3) (2-0-7) Strategies for affordable and low-cost housing. Investigation of cost-saving measures both at urban and dwelling unit levels. An analysis of recent low-cost housing projects.

ARCH 635 Selected Topics in Housing 1. (3) (3-0-6) Special topics related to housing.

ARCH 636 Selected Topics in Housing 2. (3) (3-0-6) Special topics related to housing.

ARCH 647 Cultural Mediations and Technology Studio. (6) (Restriction: Open only to students enrolled in the M.Arch. (Post-Professional) Non-Thesis - Cultural Mediation & Technology program.) Explorations of current technologies through individual design projects.

ARCH 650 Architectural History Seminar 1. (8) (3-5-16) Western Architectural history from Antiquity to the Renaissance. A hermeneutic reading of primary sources, i.e. a section or chapter of an historical treatise, a frontispiece or image, in the framework of recent scholarship on the subject.

ARCH 651 Architectural History Seminar 2. (8) (3-5-16) Early Modern European theory of architecture, 17th - 19th centuries. A hermeneutic reading of primary sources, i.e., a section or chapter of an historical treatise, a frontispiece or image, in the framework of recent scholarship on the subject.

ARCH 652 Architectural Theory Seminar 1. (4) (4-0-8) Phenomenology and hermeneutics.

ARCH 653 Architectural Theory Seminar 2. (4) (4-0-8) The experience of modernity in cultural criticism, philosophy, literature and art.

ARCH 671 Design Research and Methodology. (6) (2-10-6) (Prerequisite: ARCH 672.) An architectural design problem is selected, bibliographic research undertaken, site selection established: program developed and theoretical approach evolved in preparation for course ARCH 673.

ARCH 672 Architectural Design 1. (6) (2-10-6) A series of complex architectural and urban design issues are addressed with the intention of improving the student's facility to critically assess existing design solutions, to seek alternatives and to articulate clearly the rational and the impact of alternative proposals.

ARCH 673 Architectural Design 2. (9) (2-14-17) (Prerequisite: ARCH 671 and ARCH 672) An individual, student-selected and faculty-approved study of complex architectural design objectives involving site and building program constraints, the integration of building systems and the demonstration of comprehensive design and presentation skills.

NOTE: As of 201001, ARCH 673 Architectural Design 2 (9 cr.) will have a credit count of 6. Students should consult Class Schedule at www.mcgill.ca/student-records/register/class-schedule for the most up-to-date information.

ARCH 674 Professional Practice 1. (3) (3-0-6) (Restriction: Not open to students who have taken ARCH 674, ARCH 675 or ARCH 676 prior to 200509.) The Professional Code, the Architect's Act and the architect's responsibilities to clients, colleagues and society, including professional ethics, responsibility in design, contractual arrangements, business conduct, construction supervision, issuing of certificates, construction and project management, concepts of architectural specification writing, building costs and life cycle costing.

ARCH 677 Architectural Design 3. (6) (2-10-6) (Prerequisite: ARCH 673) (Restriction: Open only to students enrolled in M.Arch. (Professional) Non-Thesis; Design Studio.) A series of complex architectural and urban design issues are addressed, including assessing existing design solutions, seeking alternatives and articulating clearly the rationale and the impact of alternative proposals.

ARCH 678 Advanced Construction. (3) (2-0-7) An exploration of construction in relation to architectural design; research in advanced methods of construction and structure related to design problems and built projects; appropriate technologies and alternatives.

ARCH 679 Architectural Journalism. (1) (0-0-3) (Prerequisite: ARCH 674) The project deals with the review and criticism of a recently constructed controversial building.

NOTE: As of 201009, ARCH 679 Architectural Journalism (1 cr.) will be called Writing in Architecture and will have a credit count of 3. Students should consult Class Schedule at www.mcgill.ca/student-records/register/class-schedule for the most up-to-date information.

ARCH 680 Field Sketching. (3) (0-0-3) Observation, notebook recording, sketching in a range of media in the field in Montreal and other urban sites. Eight days of supervised field sketching outside Montreal, followed by local fieldwork and coursework examining architectural sketching as a process that develops an intellectual and physical framework for encounters with the urban environment.

ARCH 681 Directed Research Project Preparation. (1) (0-0-3) (Prerequisite: ARCH 673.) (Restriction: Open only to students enrolled in M.Arch. (Professional) Non-Thesis; Design Studio - Directed Research.) An architectural design proposition defined through bibliographic research, site selection, program development, identification of a methodology, and a theoretical approach established.

ARCH 682 Directed Research Project 1. (6) (2-10-6) (Prerequisite: ARCH 681.) (Restriction: Open only to students enrolled in M.Arch. (Professional) Non-Thesis; Design Studio - Directed Research.) (Note: Project development is self-directed in collaboration with a faculty advisor.) Design studio directed research project.

ARCH 683 Directed Research Project 2. (8) (2-14-8) (Prerequisite: ARCH 682.) (Restriction: Open only to students enrolled in M.Arch. (Professional) Non-Thesis; Design Studio - Directed Research.) Culmination of project development in appropriate graphic format including a written component explicating design-based research strategies and results.

ARCH 684 Contemporary Theory 1. (3) (2-0-7) (Prerequisite: Permission of instructor.) (Restriction: Open to students enrolled in all M.Arch. programs.) (Note: A variety of topics will be chosen for the seminar each year.) Critical readings in architectural design and research.
ARCH 685 CONTEMPORARY THEORY 2. (3) (2-0-7) (Prerequisites: ARCH 684 and permission of instructor.) (Restriction: Open only to students enrolled in M.Arch. programs.) (Note: A variety of topics will be chosen for the seminar each year.) Critical readings in architectural research.

ARCH 688 DIRECTED RESEARCH 1. (3) (0-0-9) (Prerequisite(s): ARCH 689 and permission of instructor.) (Restriction(s): Open only to students enrolled in M.Arch. (Professional) Non-Thesis; Design Studio - Directed Research.) Directed research in topics of specialized areas of architecture and design practice.

ARCH 689 DIRECTED RESEARCH 2. (3) (0-0-9) (Prerequisite(s): ARCH 688 and permission of instructor) (Restriction: Open only to students enrolled in M.Arch. (Professional) Non-Thesis; Studio Design - Directed Research.) Directed research in topics of specialized areas of architecture and design practice.

ARCH 700 DISSERTATION PROPOSAL. (0) Evaluation of research proposals to finalize a preliminary thesis proposal. Development of a comprehensive framework for the research project.

ARCH 701 COMPREHENSIVE ORAL EXAMINATION. (0) Presentation of research to an Advisory Committee, including a comprehensive review of material in the field.

ARCH 702 PROGRESS REPORT 1. (0) Research in progress and the writing of the dissertation.

ARCH 703 PROGRESS REPORT 2. (0) Final presentation of the dissertation to the committee.

URBD 615 URBAN DESIGN RESEARCH REPORT. (15) (44-1-0) (Prerequisites: URBD 602 or URBD 601 (or equivalent courses at UdeM and permission of instructor).) An individual research report on an urban design topic including site analysis, conceptual framework, and design development, prepared under the supervision of a faculty member.

6 Art History
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Chair — Jonathan Sterne

Director, Graduate Programs in Communication Studies — Jenny Burman

Director, Graduate Programs in Art History — Angela Vanhaelen

Director of Undergraduate Programs in Art History — Richard Taws

Director of Undergraduate Programs in Communication Studies — Carrie Rentschler

6.1 Staff

Emeritus Professors
John M. Fossey; B.A.(Birm.), D.U.(Lyon II), F.S.A., R.P.A.
George Szanto; B.A.(Dart.), Ph.D.(Harv.)

Professors
Marc Raboy; B.Sc., M.A., Ph.D.(McG.)
Christine Ross; M.A.(C’dia.), Ph.D.(Paris I)
Will Straw; B.A.(Car.), M.A., Ph.D.(McG.)

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Charmaine Nelson; B.F.A., M.A. (C’dia), Ph.D.(Manc.)
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Richard Taws, B.A., M.A., Ph.D.(Lond.)

Adjunct Professors
Johanne Lamoureux, Cornelius Borck, Charles Levin, Bronwen Wilson

6.2 Programs Offered
M.A. and Ph.D.
Areas of Specialization:
Medieval, Renaissance, the Seventeenth, Eighteenth, Nineteenth, and Twentieth Centuries, Contemporary, Canadian, East Asian, Architectural History, New Media, Gender and Sexuality, Race and Representation, and art historical methodologies, notably feminism and postcolonialism.

To obtain financial aid information please consult the Graduate and Postdoctoral Studies website at www.mcgill.ca/gps or email graduate.fellowships@mcgill.ca.

For programs in Communication Studies and Art History, refer to section 18 "Communication Studies".

6.3 Admission Requirements

Entrance into either the M.A. or Ph.D. programs is limited to the best qualified applicants. A minimum CGPA of 3.3 out of 4.0 or the equivalent, i.e., B+ (75%), is required.

To apply to the M.A. program, candidates must normally expect to have a B.A. Honours degree either in Art History alone or in Art History and one other closely related field. But regardless of the program, the Department normally requires a minimum of 36 credits (at least 12 courses) in Art History. For candidates from institutions not offering the above number of credits in Art History, provision is made, upon consultation with the Director of Graduate Programs, for a program of study which would then qualify the candidate to apply for M.A. work.

In order to apply to the Ph.D. program, candidates must normally hold an M.A. degree preferably in Art History or an M.A. degree in a closely related field together with an appropriate number of Art History credits such as are described for entrance into the M.A. program. Applicants are strongly encouraged to consult with the Director of Graduate Programs. The number of entrants to the doctoral program is necessarily limited to the most highly qualified applicants.

It should be noted that courses in studio practice, although useful, cannot be counted among the 36 Art History credits for either the M.A. or Ph.D programs. Please see as well the language requirements given under the degree programs below.

The Department also requires a 250-word statement outlining the candidate’s major interest in Art History as well as an example of written work. Applicants should send complete dossiers by January 9 (Ph.D. applicants) or by February 6 (M.A. applicants) to the Graduate Administrative Coordinator, Department of Art History and Communication Studies.
6.4 Application Procedures

Dates for Guaranteed Consideration

For dates for guaranteed consideration, please consult the following website: www.mcgill.ca/gradapplicants/programs. Then select the appropriate program.

Note: We are not willing to consider any applications to be admitted for the Winter/Summer term.

Applications will be considered upon receipt of:

1. Completed and signed application form.
2. A non-refundable application fee of CAD$100 must accompany each application (including McGill students), otherwise it cannot be considered. This sum must be remitted using one of the following methods:
   a. Credit card (by completing the appropriate section of the application form).
   b. Certified cheque in CAD currency drawn on a Canadian bank.
   c. Certified cheque in USD currency drawn on a U.S. bank.
   d. Canadian Money Order in CAD currency.
   e. U.S. Money Order in USD currency.
   f. An international draft in Canadian funds drawn on a Canadian bank requested from the applicant’s bank in his/her own country.
3. Two official copies of all transcripts are required for admission.
4. Two letters of recommendation on letterhead or bearing the university seal and with original signatures from two instructors familiar with the applicant’s work, preferably in the applicant’s area of specialization, are required. Each letter is to be accompanied by a recommender form that can be downloaded from the admissions page on the Department’s website. It is the applicant’s responsibility to arrange for transcripts to be sent. Documents submitted will not be returned. It is desirable to submit a list of the titles of courses taken in the major subject, since transcripts often give code numbers only.
5. Two letters of recommendation on letterhead or bearing the university seal and with original signatures from two instructors familiar with the applicant’s work, preferably in the applicant’s area of specialization, are required. Each letter is to be accompanied by a recommender form that can be downloaded from the admissions page on the Department’s website. It is the applicant’s responsibility to arrange for these letters and forms to be sent.
6. 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 completing the TOEFL exams (minimum score 550 on the paper-based test, 213 on the computer-based test, or 86 on the internet-based test with each component score not less than 20). Results must be submitted as part of the application.
7. Statement of interest of at least 250 words addressing the candidate’s major interest in Art History and the proposed area of research.
8. An example of written work.
9. Proof of Citizenship (certified photocopy of passport, birth certificate or equivalent).

Inquiries regarding the Programs should be addressed to the Graduate Administrative Coordinator, Department of Art History and Communication Studies (graduate.ahcs@mcgill.ca). McGill’s online application form for graduate program candidates is available at www.mcgill.ca/gradapplicants/apply.

6.5 Program Requirements

M.A. in Art History – Non-Thesis (45 credits)

Residence Requirements

For students entering the master's program in Art History, three semesters of full-time resident study at McGill University is the requirement for the degree. "Residence" means that the student is enrolled on a full-time basis during this period (the semester is not connected with housing or accommodations). This designated period of residence represents the minimum time requirements in order to obtain the degree. There is no guarantee that the work for the degree can be completed in this time. Students may register for additional semesters to complete the Program (see Time Limitation, section 6.2.7). The Department may permit master's students to register for a semester in the Summer to fulfill part of the residence requirements.

Course Work

Before classes begin, each student will meet with an advisor to determine an appropriate selection of courses which, when considered with the previous record, balances breadth of coverage and specialization.

The candidate is required to pass, with a mark of 65% (B-) or better, all those courses which have been designated by the Department as forming a part of her/his program. These are the courses which have been entered on the registration form. A few extra courses may be taken, but it is then the responsibility of the student to see that these courses are clearly marked "not required" on the registration form.

General Description

The student takes 9 courses including the Proseminar and writes a research paper.

Two of the courses can be taken outside of Art History but at McGill.

One course may be taken at another university in Montreal.

All courses taken outside of Art History require the approval of the graduate program director, in consultation with the advisor, and the professor teaching the seminar.

The program is designed to be completed in four semesters, but may be completed in three semesters.

Language Requirements for the M.A. Degree: In addition to possessing a proficiency in English and French, students must demonstrate reading knowledge of any language relating to their research project assessed by means of a written translation of a text.

Course Sequence

All students must register for 45 credits.

Semester 1 – 12 credits

ARTH 600 (3) Advanced Professional Seminar
ARTH 606 (3) Research Paper Preparation
Two complementary courses (6 credits)

Semester 2 – 12 credits

ARTH 607 (3) Research Paper Proposal
Three complementary courses (9 credits)

Semester 3 – 12 credits

ARTH 608 (6) Research Paper 1
Two complementary courses (6 credits)

Semester 4 – 9 credits

ARTH 609 (6) Research Paper 2
One complementary course (3 credits)
Program Requirements Overview

Required Course (3 credits)
ARTH 600 (3) Advanced Professional Seminar

Complementary Courses (24 credits)
24 credits chosen from the following:
ARTH 510 (3) The Body and Visual Culture
ARTH 617 (3) Modern Art
ARTH 618 (3) Art History - 1400 to 1900 1
ARTH 630 (3) Directed Reading 1
ARTH 641 (3) Topics: Greek Art & Archaeology
ARTH 642 (3) Topics: Roman Art & Archaeology
ARTH 643 (3) Topics: Medieval Art & Architecture
ARTH 646 (3) Topics: Chinese Visual Culture
ARTH 647 (3) Topics: Renaissance Art & Architecture 1
ARTH 648 (3) Topics: Renaissance Art & Architecture 2
ARTH 653 (3) Topics: Early Modern Visual Culture 1
ARTH 654 (3) Topics: Early Modern Visual Culture 2
ARTH 655 (3) Topics: Baroque Art and Architecture
ARTH 656 (3) Topics: 17th Century Art & Architecture 1
ARTH 657 (3) Topics: 17th Century Art & Architecture 2
ARTH 660 (3) Contemporary Art & Criticism 1
ARTH 661 (3) Contemporary Art & Criticism 2
ARTH 673 (3) Topics: 18th Century Art & Architecture 1
ARTH 674 (3) Topics: 18th Century Art & Architecture 2
ARTH 675 (3) Topics: 19th Century Art & Architecture 1
ARTH 678 (3) Topics: 19th Century Art & Architecture 2
ARTH 679 (3) Topics: Canadian Art & Visual Culture 1
ARTH 687 (3) Topics: Canadian Art & Visual Culture 2

or from the 700-level Complementary courses listed for the Ph.D.

Normally only 3 credits at the 500 level are permitted.
Alternatively, up to 6 credits may be from other disciplines, as approved by the Department.
Three credits may be taken at another approved university.

Research Paper - Required (18 credits)
ARTH 606 (3) Research Paper Preparation
ARTH 607 (3) Research Paper Proposal
ARTH 608 (6) Research Paper 1
ARTH 609 (6) Research Paper 2

M.A. in Art History (Non-Thesis) – Gender and Women’s Studies Option/Concentration (45 credits)
The Graduate option in Gender and Women’s Studies is an interdisciplinary program for students who meet the degree requirements in Art History who wish to earn 6 credits of approved coursework focusing on gender and women’s studies, and issues in feminist research and methods. The final research paper must be on a topic centrally related to gender and/or women’s studies. The term “research paper” here refers to the major research paper that students in the non-thesis stream normally (but not necessarily) write for a graduate seminar or independent reading course during the academic year and then revise and expand during the following summer under the supervision of a faculty member.

Required Courses (6 credits)
ARTH 600 (3) Advanced Professional Seminar
WMST 601 (3) Feminist Theories and Methods

Complementary Courses (21 credits)
All complementary courses must be at the 500 level or higher.
3 credits of coursework must be either:
WMST 602 (3) Feminist Research Symposium
OR, a 3-credit option-approved course taught outside of WMST (e.g., an option-approved Art History course, COMS 633 Feminist Media Studies (3), or an option-approved course taught in another discipline).
3 credits may be taken at another university in Montreal.

Research Paper - Required (18 credits)
ARTH 606 (3) Research Paper Preparation
ARTH 607 (3) Research Paper Proposal
ARTH 608 (6) Research Paper 1
ARTH 609 (6) Research Paper 2

Language Requirements: In addition to possessing a proficiency in English and French, students must demonstrate reading knowledge of any language relating to their research project assessed by means of a written translation of a text.

Ph.D. in Art History
Students should refer to the departmental website for information about Ph.D. residency and timing.

Required Courses (3 credits)
ARTH 600 (3) Advanced Professional Seminar

Complementary Courses (12 credits)
12 credits, four courses chosen from the following:
ARTH 711 (3) Studies in the Graphic Arts
ARTH 712 (3) Studies in the Graphic Arts
ARTH 713 (3) Studies in the Graphic Arts
ARTH 714 (3) Directed Reading 2
ARTH 715 (3) Research: Modern Architecture - 1750 to Present
ARTH 716 (3) Research: Modern Architecture - 1750 to Present
ARTH 717 (3) Seminar in Urban Planning and Topography
ARTH 718 (3) Seminar in Urban Planning and Topography
ARTH 719 (3) Seminar in Urban Planning and Topography
ARTH 720 (3) Studies in Drawings
ARTH 721 (3) Studies in Drawings
ARTH 722 (3) Studies in Drawings
ARTH 723 (3) Art Criticism 1
ARTH 724 (3) Art Criticism 2
ARTH 725 (3) Methods in Art History
ARTH 730 (3) Current Problems in Art History 1
ARTH 731 (3) Current Problems in Art History 2
or from the 600-level Complementary courses listed for the M.A.
Alternatively, up to 3 of the 12 credits may be from other disciplines, as approved by the Department.

Comprehensive - Required
ARTH 701 (0) Ph.D. Comprehensive Examination

Thesis
In addition to possessing a proficiency in English and French, students must demonstrate reading knowledge of any language, if necessary, relating to their research project assessed by means of a written translation of a text.

The Department is prepared to direct dissertations in fields wherein adequate supervision and resources can be provided: see section 8.2, “Programs Offered”. Candidates are also advised to consult the General Information section of the Graduate and Postdoctoral Studies Calendar.

Ph.D. in Art History – Gender and Women’s Studies Option/Concentration
Students should refer to the departmental website for information about Ph.D. residency and timing.

The Graduate option in Gender and Women’s Studies is an interdisciplinary program for students who meet the degree requirements in Art History who wish to earn 9 credits of approved coursework focusing on gender and women’s studies, and issues in feminist research and methods. The student’s doctoral thesis must be on a topic centrally related to issues of gender and/or women’s studies.

Required Courses (9 credits)
ARTH 600 (3) Advanced Professional Seminar
WMST 601 (3) Feminist Theories and Methods
WMST 602 (3) Feminist Research Symposium

Complementary Courses (6 credits)
An additional 9 credits in Art History, of which 3 credits must be a graduate option-approved 500- or 600-level ARTH course.

Comprehensive - Required
ARTH 701 (0) Ph.D. Comprehensive Examination

Thesis
**Language Requirements:** In addition to possessing a proficiency in English and French, students must demonstrate reading knowledge of any language relating to their research project assessed by means of a written translation of a text.

The Department is prepared to direct dissertations in fields wherein adequate supervision and resources can be provided: see section 6.2, “Programs Offered”. Candidates are also advised to consult the General Information section of the Graduate and Postdoctoral Studies Calendar.

### 6.6 Courses

Students preparing to register should consult Class Schedule on the web at [www.mcgill.ca/student-records/register/class-schedule](http://www.mcgill.ca/student-records/register/class-schedule) for the most up-to-date list of courses available; courses may have been added, rescheduled or cancelled after this Calendar was published. Class Schedule lists courses by term and includes days, times, locations, and names of instructors.

Students may also consult the Department website ([www.mcgill.ca/ahcs](http://www.mcgill.ca/ahcs)) for information.

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

**ARTH 600 ADVANCED PROFESSIONAL SEMINAR.** (3) A seminar course for M.A. and Ph.D. students dealing with methodological issues in Art History.

**ARTH 601 MASTERS COMPREHENSIVE PREPARATION.** (3) (The general examination for the M.A. degree (ARTH 602, 6 credits; including preparation for it, ARTH 601, 3 credits) carries a total weight of nine (9) credits.)

**ARTH 602 MASTERS COMPREHENSIVE EXAMINATION.** (6) (The general examination for the M.A. degree (ARTH 602, 6 credits; including preparation for it, ARTH 601, 3 credits) carries a total weight of nine (9) credits.)

**ARTH 605 MASTER’S THESIS PREPARATION.** (3) (Restriction: For Art History students only.) The aim is to introduce the student to research methods specific to his/her area of thesis work.

**ARTH 606 RESEARCH PAPER PREPARATION.** (3) (Restriction: For M.A. Art History non-thesis students only.) A directed reading course related to a student’s specific area of research.

**ARTH 607 RESEARCH PAPER PROPOSAL.** (3) (Prerequisite: ARTH 606.) (Restriction: For M.A. Art History non-thesis students only.) A proposal prepared in consultation with an advisor detailing the research to be pursued, defining the particular argument to be advanced in the research paper and indicating the methodology to be employed.

**ARTH 608 RESEARCH PAPER 1.** (6) (Prerequisites: ARTH 606 and ARTH 607.) (Restriction: For M.A. Art History non-thesis students only.) An extended research project, pursued under supervision of a member of the Department.

**ARTH 609 RESEARCH PAPER 2.** (6) (Prerequisites: ARTH 606 and ARTH 607. ARTH 608 as Prerequisite or Corequisite.) (Restriction: For M.A. Art History non-thesis students only.) The continuation of an extended research project, pursued under supervision of a member of the Department.

**ARTH 617 MODERN ART.** (3)

**ARTH 618 ART HISTORY - 1400-1900 1.** (3)

**ARTH 619 ART HISTORY - 1400-1900 2.** (3)

**ARTH 630 DIRECTED READING 1.** (3) Directed reading.

**ARTH 641 TOPICS: GREEK ART & ARCHAEOLOGY.** (3) Topics in Greek art and archaeology.

**ARTH 642 TOPICS: ROMAN ART & ARCHAEOLOGY.** (3) Topics in Roman art and archaeology.

**ARTH 643 TOPICS: MEDIEVAL ART & ARCHITECTURE.** (3) Topics in medieval art and architecture.

**ARTH 646 TOPICS: CHINESE VISUAL CULTURE.** (3) Topics in Chinese visual culture.

**ARTH 647 TOPICS: RENAISSANCE ART & ARCHITECTURE 1.** (3) Topics in Renaissance art and architecture.

**ARTH 648 TOPICS: RENAISSANCE ART & ARCHITECTURE 2.** (3) Topics in Renaissance art and architecture.

**ARTH 653 TOPICS: EARLY MODERN VISUAL CULTURE 1.** (3) Topics in early modern visual culture.

**ARTH 654 TOPICS: EARLY MODERN VISUAL CULTURE 2.** (3) Topics in early modern visual culture.

**ARTH 655 TOPICS: BAROQUE ART AND ARCHITECTURE.** (3) Topics in Baroque art and architecture.

**ARTH 656 TOPICS: 17TH - CENTURY ART & ARCHITECTURE 1.** (3) Topics in 17th - century art and architecture.

**ARTH 657 TOPICS: 17TH - CENTURY ART & ARCHITECTURE 2.** (3) Topics in 17th - century art and architecture.

**ARTH 660 CONTEMPORARY ART & CRITICISM 1.** (3) Topics in contemporary art and criticism.

**ARTH 661 CONTEMPORARY ART & CRITICISM 2.** (3) Topics in contemporary art and criticism.

**ARTH 673 TOPICS: 18TH - CENTURY ART & ARCHITECTURE 1.** (3) Topics in 18th - century art and architecture.

**ARTH 674 TOPICS: 18TH - CENTURY ART & ARCHITECTURE 2.** (3) Topics in 18th - century art and architecture.

**ARTH 675 TOPICS: 19TH - CENTURY ART & ARCHITECTURE 1.** (3) Topics in 19th - century art and architecture.

**ARTH 678 TOPICS: 19TH - CENTURY ART & ARCHITECTURE 2.** (3) Topics in 19th - century art and architecture.

**ARTH 679 TOPICS: CANADIAN ART & VISUAL CULTURE 1.** (3) Topics in Canadian art and visual culture.

**ARTH 680 GRAPHIC THEORIES OF WRITING.** (3) Interdisciplinary examination of the major theories of writing since the 1950’s, with emphasis on the graphic and material dimensions of inscriptive media.

**ARTH 687 TOPICS: CANADIAN ART & VISUAL CULTURE 2.** (3) Topics in Canadian art and visual culture.

**ARTH 698 THESIS RESEARCH 1.** (12) (Restriction: No credit will be given for this course unless both ARTH 698 and ARTH 699 are successfully completed.) For the completion of thesis research.

**ARTH 699 THESIS RESEARCH 2.** (12) (Restrquisite: ARTH 698.) (Restriction: No credit will be given for this course unless both ARTH 698 and ARTH 699 are successfully completed.) For the completion of thesis research.

**ARTH 701 PH.D. COMPREHENSIVE EXAMINATION.** (0)

**ARTH 701D1 (0), ARTH 701D2 (0) PH.D. COMPREHENSIVE EXAMINATION.** (Students must register for both ARTH 701D1 and ARTH 701D2) (No credit will be given for this course unless both ARTH 701D1 and ARTH 701D2 are successfully completed in consecutive terms) (ARTH 701D1 and ARTH 701D2 together are equivalent to ARTH 701)

**ARTH 701N1 PH.D. COMPREHENSIVE EXAMINATION.** (0) (Students must also register for ARTH 701N2) (No credit will be given for this course unless both ARTH 701N1 and ARTH 701N2 are successfully completed in a twelve month period) (ARTH 701N1 and ARTH 701N2 together are equivalent to ARTH 701)

**ARTH 701N2 PH.D. COMPREHENSIVE EXAMINATION.** (0) (Prerequisite: ARTH 701N1) (No credit will be given for this course unless both ARTH 701N1 and ARTH 701N2 are successfully completed in a twelve month period) (ARTH 701N1 and ARTH 701N2 together are equivalent to ARTH 701) See ARTH 701N1 for course description.

**ARTH 714 RESEARCH: MODERN ARCHITECTURE - 1750 TO PRESENT 1.** (3) Directed reading.

**ARTH 724 ART CRITICISM 2.** (3) Topics in art criticism.

**ARTH 725 METHODS IN ART HISTORY 1.** (3)

**ARTH 730 CURRENT PROBLEMS IN ART HISTORY 1.** (3) Current problems in art history.
7 Atmospheric and Oceanic Sciences

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Chair — J.R. Gyakum

7.1 Staff

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J.E. Staunton; M.A., Ph.D.(Tor.)

Professors
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J.R. Gyakum; B.Sc.(Penn. St.), M.Sc., Ph.D.(MIT)
H.G. Leighton; B.Sc., M.Sc.(McG.), Ph.D.(Alta.)
A.M. Mysak; C.M., B.Sc.(Alta.), M.Sc.(Adel.), A.M., Ph.D.(Harv.),
F.R.S.C. (Canada Steamship Lines Professor of Meteorology)
M.K. Yau; S.B., S.M., Sc.D.(MIT) (NSERC/Hydro-Québec
Industrial Research Chair in Short-term Forecasting of
Precipitation)
I. Zawadzki; B.Sc.(Buenos Aires), M.Sc., Ph.D.(McG.), F.R.S.C.

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P. Bartello; B.Sc., M.Sc., Ph.D.(McG.) (joint appt. with
Mathematics)
F. Fabry; B.Sc., M.Sc., Ph.D.(McG.) (joint appt. with McGill School
of Environment)
D. Straub; B.S., M.S.(SW Louisiana), Ph.D.(Wash.)

Assistant professors
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P. Kollias; B.Sc., M.S.(Athena), Ph.D.(Miami)
S.W. Son; B.Sc., M.Sc.(Seoul National, Korea), Ph.D.(Penn. St.)
B. Tremblay; B.Sc., M.Sc.(Car.), Ph.D.(McG.)

Adjunct professors
P. Gauthier, C.A. Lin, H. Lin, S. Melo, R.E. Stewart

7.2 Programs Offered

The Department of Atmospheric and Oceanic Sciences offers
courses and research opportunities in atmospheric, physical oce-
anographic, and climate fields leading to the M.Sc. and Ph.D.
degrees. Research programs include the main areas of atmos-
pheric science, such as cloud and precipitation physics, dynamic
meteorology, numerical weather prediction, atmospheric chemis-
try, radar and satellite meteorology, and mesoscale meteorology.
Research projects in physical oceanography include the modelling
of ocean circulations as well as studies of sea ice and paleocli-
nates. Some faculty members are associated with the Global
Environmental and Climate Change Centre (GEC3), which brings
together researchers from several departments to work on prob-
lems affecting the evolution of our planet, with emphasis on
climate-related questions. Topics of research of this nature in the
Department include large scale air/sea interaction, air/sea-ice
interaction, inter-annual and longer term variability of the atmos-
phere and oceans, and cloud-radiation climate interaction.

Other faculty members are associated with the Cooperative
Centre for Research in Mesoscale Meteorology which also includes
researchers in several other departments at McGill, in the
Département de Physique at the Université du Québec à Mon-
tréal, and in Montreal offices of the Meteorological Service of
Canada. The objective of the Centre is to study the evolution,
maintenance and decay of mesoscale precipitation systems.
Such systems, whose sizes range from 10 to 300 km, are impor-
tant for the precipitation climatology of southern Quebec.

Facilities include the J. Stewart Marshall Radar Observatory, a
radar wind profiler and a laser ceilometer and several years of
global atmospheric data. Graduate students have access to large
and small computers, including the NEC supercomputer of the
Meteorological Service of Canada.

Financial assistance in the form of research or teaching assist-
antships is available for all qualified graduate students.

7.3 Admission Requirements

Applicants for the M.Sc. program must meet the general require-
ments of Graduate and Postdoctoral Studies and hold a bachelor's
degree with high standing in atmospheric science, physics, math-
ematics, engineering, or equivalent.

The normal requirement for admission to the Ph.D. program is
an M.Sc. degree in atmospheric science, physical oceanography,
or related discipline with acceptably high standing. Students with-
out a master's degree in Atmospheric Science (Meteorology) or
Physical Oceanography but with a strong background in related
disciplines (physics, mathematics, engineering) may be admitted
to the Ph.D. program. They enter at the Ph.D. 1 rather than the
Ph.D. 2 level, and devote the first year of the program mainly to
course work.

Inquiries should be addressed directly to the Chair of Admis-
sions, Department of Atmospheric and Oceanic Sciences.

McGill’s online application form for graduate program candi-
dates is available at www.mcgill.ca/gradapplicants/apply.

Dates for Guaranteed Consideration

For dates for guaranteed consideration, please consult the follow-
ng website: www.mcgill.ca/gradapplicants/programs. Then select
the appropriate program.

Note: We are not willing to consider any applications to be
admitted for the Summer term.

7.4 Program Requirements

M.Sc. in Atmospheric and Oceanic Sciences (Thesis)
(45 to 51 credits)

The M.Sc. degree requires a minimum of 45 credits, up to a max-
imum of 51 credits. The program includes from 9 to 27 credits of
course work (depending on the student’s background), a minimum
of 24 thesis research credits, and the completion of a thesis satis-
fying all the requirements of Graduate and Postdoctoral Studies.

Normally the equivalent of 12 months of full-time work is required
to obtain the thesis-related credits, in addition to the time needed
for the course work. Students can choose to write their thesis
based on research in atmospheric, oceanic, or climate topics.

Complementary Courses (21 credits)

Must complete or have completed the following courses or
equivalent:

ATOC 512 (3) Atmospheric and Oceanic Dynamics
ATOC 531 (3) Dynamics of Current Climates
ATOC 540 (3) Synoptic Meteorology 1
ATOC 546 (1) Current Weather Discussion
ATOC 550 (1) Special Topics Meteorology and
Oceanography
ATOC 621 (3) Physical Meteorology 2
Other 500- or 600-level courses in the Department of Atmospheric and Oceanic Sciences, up to ATOC 690 for a total of 21 credits. Subject to the approval of the Graduate Program Director, graduate-level courses in other departments may be substituted for ATOC courses.

Students with a strong background in atmospheric or oceanic science, or a Diploma in Meteorology, will take at least the 7 credit minimum. Students with no previous background in atmospheric or oceanic science must take the 20 credit maximum.

**Thesis Component – Required** (24 credits)
- ATOC 691 (3) Master's Thesis Literature Review
- ATOC 692 (6) Master's Thesis Research 1
- ATOC 694 (3) Master's Thesis Progress Report and Seminar
- ATOC 699 (12) Master's Thesis

Students registered in M.Sc. programs are expected to regularly attend both the student seminar series (ATOC 751 D1/D2 or ATOC 752 D1/D2) and the Department seminar series during the entire period of their enrolment in the program.

**M.Sc. in Atmospheric and Oceanic Sciences (Thesis) – Computational Science and Engineering Option/Concentration (45 - 55 credits)**

**Required Courses** (25 credits)
- ATOC 669D1 (0.5) CSE Seminar
- ATOC 669D2 (0.5) CSE Seminar
- ATOC 691 (3) Master's Thesis Literature Review
- ATOC 692 (6) Master's Thesis Research 1
- ATOC 694 (3) Master's Thesis Progress Report and Seminar
- ATOC 699 (12) Master's Thesis

**Complementary Courses** (20 - 30 credits)

**Departmental Courses** (4 - 14 credits)
- ATOC 512 (3) Atmospheric and Oceanic Dynamics
- ATOC 531 (3) Dynamics of Current Climates
- ATOC 540 (3) Synoptic Meteorology 1
- ATOC 546 (1) Current Weather Discussion
- ATOC 550 (1) Special Topics Meteorology and Oceanography
- ATOC 621 (3) Physical Meteorology 2

Departmental courses will be selected in consultation with the Graduate Program Director.

**16 credits from the following:**
Two courses from List A, two courses from List B, and the remaining credits (if any) to be chosen from graduate courses (500 or 600 level) in the Department of Atmospheric and Oceanic Sciences. Two of these complementary courses must be taken outside the Department of Atmospheric and Oceanic Sciences.

**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 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
- CIVE 613 (4) Numerical Methods: Structural Engineering
- COMP 505 (3) Advanced Computer Architecture
- COMP 557 (3) Fundamentals of Computer Graphics
- COMP 558 (3) Fundamentals of Computer Vision
- COMP 567 (3) Discrete Optimization 2
- COMP 621 (4) Optimizing Compilers
- COMP 642 (4) Numerical Estimation Methods
- COMP 767 (3) 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 651 (4) Asymptotic Expansion and Perturbation Methods
- MATH 761 (4) Topics in Applied Math 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 545 (3) Advanced Stress Analysis
- MECH 572 (3) Introduction to Robotics
- MECH 573 (3) Mechanics of Robotic Systems
- MECH 576 (3) Computer Graphics and Geometrical Modelling
- 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) Heat Transfer
- MECH 654 (4) Compt. Fluid Flow and Heat Transfer

Students registered in M.Sc. programs are expected to regularly attend both the student seminar series (ATOC 751 D1/D2 or ATOC 752 D1/D2) and the Department seminar series during the entire period of their enrolment in the program.

**M.Sc. in Atmospheric and Oceanic Sciences (Thesis) – Environment Option/Concentration (48 credits)**

**Required Courses** (30 credits)
- ATOC 691 (3) Master's Thesis Literature Review
- ATOC 692 (6) Master's Thesis Research 1
- ATOC 694 (3) Master's Thesis Progress Report and Seminar
- ATOC 699 (12) Master's Thesis
- ENVR 610 (3) Foundations of Environmental Policy
- ENVR 650 (1) Environmental Seminar 1
- ENVR 651 (1) Environmental Seminar 2
- ENVR 652 (1) Environmental Seminar 3

**Complementary Courses** (18 credits)
15 credits of departmental courses, chosen from:
- ATOC 512 (3) Atmospheric and Oceanic Dynamics
- ATOC 513 (3) Waves & Stability
- ATOC 515 (3) Turbulence in Atmosphere and Oceans
- ATOC 530 (3) Paleoclimatic Dynamics
- ATOC 531 (3) Dynamics of Current Climates
- ATOC 540 (3) Synoptic Meteorology 1
- ATOC 541 (3) Synoptic Meteorology 2
- ATOC 568 (3) Ocean Physics
- ATOC 619 (3) Atmospheric Chemistry
- ATOC 620 (3) Physical Meteorology 1
- ATOC 621 (3) Physical Meteorology 2
- ATOC 626 (3) Atmospheric / Oceanic Remote Sensing
- ATOC 646 (3) Mesoscale Meteorology
- ATOC 666 (3) Topics in Ocean Circulation

or another course at the 500 level or higher recommended by the department's Graduate Program Director.

3 credits of MSE courses, chosen from:
- ENVR 519 (3) Global Environmental Politics
- ENVR 544 (3) Environmental Measurement and Modelling
- ENVR 580 (3) Topics in Environment 3
ENVR 611 (3) The Economy of Nature
ENVR 620 (3) Environment and Health of Species
ENVR 622 (3) Sustainable Landscapes
ENVR 630 (3) Civilization and Environment 1
ENVR 680 (3) Topics in Environment 4
or another course at the 500 level or higher recommended by the advisory committee and approved by the Environment Option Committee

Students registered in M.Sc. programs are expected to regularly attend both the student seminar series (ATOC 751 D1/D2 or ATOC 752 D1/D2) and the Department seminar series during the entire period of their enrolment in the program.

Ph.D. in Atmospheric and Oceanic Sciences
The Ph.D. program consists of supervised research and a minimum of two approved courses. Candidates are required to submit a written thesis proposal, to present a Ph.D. proposal seminar (ATOC 700) and to take the Ph.D. oral comprehensive examination (ATOC 701). The standard Graduate and Postdoctoral Studies requirements concerning a thesis must be satisfied.

Required Courses (1 credit)
ATOC 700 (1) Ph.D. Proposal Seminar.
ATOC 701 (0) Ph.D. Comprehensive (General)

Complementary Courses (7 credits)
1 credit from the following:
ATOC 751D1 (0.5) Seminar: Physical Meteorology
ATOC 751D2 (0.5) Seminar: Physical Meteorology
Or
ATOC 752D1 (0.5) Atmospheric, Oceanic and Climate Dynamics
ATOC 752D2 (0.5) Atmospheric, Oceanic and Climate Dynamics
6 credits from the Department of Atmospheric and Oceanic Sciences, at the 500 or 600 level, as approved by the Graduate Program Director.

Students registered in the Ph.D. program are expected to regularly attend both the student seminar series (ATOC 751 D1/D2 or ATOC 752 D1/D2) and the Department seminar series during the entire period of their enrolment in the program.

Thesis:
A written thesis followed by an oral defense. The standard Graduate and Postdoctoral Studies requirements concerning a thesis must be satisfied.

7.5 Courses
Students preparing to register should consult Class Schedule on the web at www.mcgill.ca/students-records/class-schedule for the most up-to-date list of courses available; courses may have been added, rescheduled or cancelled after this Calendar was published. Class Schedule lists courses by term and includes days, times, locations, and names of instructors.

Term(s) offered (Fall, Winter, Summer) may appear after the credit weight to indicate when a course would normally be taught. Please check Class Schedule to confirm this information.

Note: All undergraduate courses administered by the Faculty of Science (courses at the 100 to 500 level) have limited enrolment. The course credit weight is given in parentheses after the title.

ATOC 512 ATMOSPHERIC AND OCEANIC DYNAMICS. (3) (Fall) (3 hours lectures) (Prerequisite (Undergraduate): Permission of instructor) Introduction to the fluid dynamics of large-scale flows of the atmosphere and oceans. Stratification of atmosphere and oceans. Equations of state, thermodynamics and momentum. Kinematics, circulation, and vorticity. Hydrostatic and quasi-geostrophic flows. Brief introduction to wave motions, flow over topography, Ekman boundary layers, turbulence.


ATOC 515 TURBULENCE IN ATMOSPHERE AND OCEANS. (3) (Winter) (3 hours lectures) (Prerequisite (Undergraduate): ATOC 512 or permission of instructor) Application of statistical and semi-empirical methods to the study of geophysical turbulence. Reynolds’ equations, dimensional analysis, and similarity. The surface and planetary boundary layers. Oceanic mixed layer. Theories of isotropic two- and three-dimensional turbulence; energy and enstrophy inertial ranges. Beta turbulence.

ATOC 530 PALEOCLIMATE DYNAMICS. (3) (Winter) (3 hours lectures) (Prerequisite (Undergraduate): Permission of instructor) (Restriction: Graduate students and final-year Honours Atmospheric Science students. Others by special permission.) Introduction to the components of the climate system. Review of paleoclimate. Physical processes and models of climate and climate change.

ATOC 531 DYNAMICS OF CURRENT CLIMATES. (3) (Fall) (3 hours lectures) (Prerequisite (Undergraduate): Permission of instructor) (Restriction: Graduate students and final-year Honours Atmospheric Science students. Others by special permission.) The general circulation of the atmosphere and oceans. Atmospheric and oceanic general circulation models. Observations and models of the El Niño and Southern Oscillation phenomena.

ATOC 540 SYNOPTIC METEOROLOGY 1. (3) (Fall) (2 hours lectures; 2 hours laboratory) (Prerequisite (Undergraduate): Permission of instructor) Analysis of current meteorological data. Description of a geostrophic, hydrostatic atmosphere. Ageostrophic circulations and hydrostatic instabilities. Kinematic and thermodynamic methods of computing vertical motions. Tropical and extratropical condensation rates. Barotropic and equivalent barotropic atmospheres.

ATOC 541 SYNOPTIC METEOROLOGY 2. (3) (Winter) (2 hours lectures; 2 hours laboratory) (Prerequisite (Undergraduate): ATOC 412 and ATOC 540 or permission of instructor) Analysis of current meteorological data. Quasi-geostrophic theory, including the omega equation, as it relates to extratropical cyclone and anticyclone development. Frontogenesis and frontal circulations in the lower and upper troposphere. Cumulus convection and its relationship to tropical and extratropical circulations. Diagnostic case study work.

ATOC 546 CURRENT WEATHER DISCUSSION. (1) (Winter) (2 hours) (Prerequisite (Undergraduate): ATOC 540 or permission of instructor) (Restriction: Graduate students and final-year Honours Atmospheric Science students. Others by special permission.) Half-hour briefing on atmospheric general circulation and current weather around the world using satellite data, radar observations, conventional weather maps, and analyses and forecasts produced by computer techniques.

ATOC 550 SPECIAL TOPICS METEOROLOGY AND OCEANOGRAPHY. (1) (Fall) (1 hour lecture) (Prerequisite (Undergraduate): Permission of instructor) (Restriction: Graduate students and final-year Honours Atmospheric Science students. Others by special permission.) Lectures and seminars on special topics such as hydrology, agricultural meteorology, the limits of predictability, planetary atmospheres, atmospheric and oceanic pollution, coastal currents, and research reviews.

ATOC 551 SELECTED TOPICS 1. (3) (Restriction: Course restricted to students in U3 undergraduate or graduate programs in ATOC or in closely related disciplines, and permission of the instructor.) Topics in atmospheric and oceanic sciences.

ATOC 552 SELECTED TOPICS 2. (3) (Restrictions: Course restricted to students in U3 undergraduate or graduate programs in ATOC or in closely related disciplines, and permission of the instructor.) Topics in atmospheric and oceanic sciences.

ATOC 555 FIELD COURSE 1. (3) (Restrictions: Course restricted to students in U3 undergraduate or graduate programs in ATOC or in
closely related disciplines, and permission of the instructor.) Field studies in selected topics of the atmospheric and oceanic sciences.

ATOC 556 FIELD COURSE 2. (3) (Restrictions: Course restricted to students in U2 undergraduate or graduate programs in ATOC or in closely related disciplines, and permission of the instructor.) Field studies in selected topics of the atmospheric and oceanic sciences.

ATOC 558 NUMERICAL METHODS AND LABORATORY. (3) (Winter) (1 hour lecture; 4 hours laboratory) (Prerequisite (Undergraduate): Permission of instructor) (Restriction: Graduate students and final-year Honours Atmospheric Science students. Others by special permission.) Numerical simulation of atmospheric and oceanic processes. Finite difference, finite element, and spectral modelling techniques. Term project including computer modelling of convection or large-scale flows in the atmosphere or ocean.

ATOC 568 OCEAN PHYSICS. (3) (Winter) (3 hours lectures) (Prerequisite (Undergraduate): ATOC 512 or permission of instructor) (Restriction: Graduate students and final-year Honours Atmospheric Science students. Others by special permission.) Research methods in physical oceanography including data analysis and literature review. Course will be divided into five separate modules focussing on temperature-salinity patterns, ocean circulation, boundary layers, wave phenomena and tides.

ATOC 616 TOPICS - GEOPHYSICAL FLUID DYNAMICS. (3) (3 hours) Advanced topics in the dynamics of oceanic and atmospheric flows.

ATOC 619 ATMOSPHERIC CHEMISTRY. (4) (3 hours) (Prerequisites: CHEM 213, CHEM 273, MATH 222 and MATH 315 or equivalents, or permission of instructor) (Restriction(s): Offered in odd years. Students should register in CHEM 619 in even years. Not open to students who have taken or are taking ATOC 419, CHEM 419, or CHEM 619) Selected areas of atmospheric chemistry from field and laboratory to theoretical modelling are examined. The principles of atmospheric reactions (gas, liquid and heterogeneous phases in aerosols and clouds) and issues related to chemical global change will be explored.


ATOC 646 MESOSCALE METEOROLOGY. (3) (3 hours) Examination of the theory of important mesoscale phenomena, including fronts, cumulus convection and its organization, and tropical and extratropical cyclones. Application of the theory with detailed case studies of these phenomena. Mesoscale processes in numerical simulations.

ATOC 669D1 (0.5), ATOC 669D2 (0.5) CSE SEMINAR. Techniques and applications in computational science and engineering.

ATOC 670 READING COURSE: METEOROLOGY 1. (3) Assigned reading of a specialized topic in meteorology with formal evaluation.

ATOC 671 READING COURSE: METEOROLOGY 2. (3) Assigned reading of a specialized topic in meteorology with formal evaluation.

ATOC 672 READING COURSE: OCEANOGRAPHY 1. (3) Assigned reading of a specialized topic in oceanography with formal evaluation.

ATOC 673 READING COURSE: OCEANOGRAPHY 2. (3) Assigned reading of a specialized topic in oceanography with formal evaluation.

ATOC 691 MASTER’S THESIS LITERATURE REVIEW. (3) Review of relevant literature in preparation for the M.Sc. research.

ATOC 692 MASTER’S THESIS RESEARCH 1. (6) Independent research under the supervision of the student’s M.Sc. supervisor.

ATOC 693 MASTER’S THESIS RESEARCH 2. (6) Independent research under the supervision of the student’s M.Sc. supervisor.

ATOC 694 MASTER’S THESIS PROGRESS REPORT AND SEMINAR. (3) Written report on the M.Sc. research progress and oral presentation of the report in seminar form to staff and students.

ATOC 695 MASTER’S THESIS RESEARCH 3. (6) Independent research under the supervision of the student’s M.Sc. supervisor.

ATOC 696 MASTER’S THESIS RESEARCH 4. (6) Independent research under the supervision of the student’s M.Sc. supervisor.

ATOC 699 MASTER’S THESIS. (12) Independent research under the supervision of the student’s M.Sc. supervisor leading to the M.Sc. thesis.

ATOC 700 PH.D. PROPOSAL SEMINAR. (1)

ATOC 701 PH.D. COMPREHENSIVE (GENERAL). (0)

ATOC 751D1 (0.5), ATOC 751D2 (0.5) SEMINAR: PHYSICAL METEOROLOGY. (Students must register for both ATOC 751D1 and ATOC 751D2) (No credit will be given for this course unless both ATOC 751D1 and ATOC 751D2 are successfully completed in consecutive terms) (ATOC 751D1 and ATOC 751D2 together are equivalent to ATOC 751) Seminars on topics in physical meteorology. Students are required to present one or more seminars during the year on their thesis research and to participate actively in the seminars given by others.

ATOC 752D1 (0.5), ATOC 752D2 (0.5) ATMOSPHERIC, OCEANIC AND CLIMATE DYNAMICS. (Students must register for both ATOC 752D1 and ATOC 752D2) (No credit will be given for this course unless both ATOC 752D1 and ATOC 752D2 are successfully completed in consecutive terms) Seminars on topics in atmospheric, oceanic and climate dynamics. Students are required to present one or more seminars during the year on their thesis research and to participate actively in the seminars given by others.

### 8. Biochemistry

#### Department of Biochemistry

McIntyre Medical Sciences Building
3655 Promenade Sir-William-Osler
Montreal, QC H3G 1Y6
Canada

Telephone: Maureen Caron; Student Affairs Officer 514-398-7266
Fax: 514-398-7384
Email: admissions.biochemistry@mcgill.ca

Website: www.mcgill.ca/biochemistry
Website: www.mcgill.ca/biochemistry/chemicalbiology

**Chair** — David Y. Thomas

**Associate Chair** — Peter E. Braun

#### 8.1 Staff

**Emeritus Professors**

Rose M. Johnstone; B.Sc., Ph.D.(McG.), F.R.S.C.

Edward A. Meighen; B.Sc.(Alta.), Ph.D. (Calif., Berk.)

Clifford P. Stanners; B.Sc.(McM.), M.A., Ph.D.(Tor.)

Theodore L. Sourkes; M.Sc.(McG.), Ph.D.(C’nell), F.R.S.C.

**Professors**

Nicole Beauchemin; B.Sc., M.Sc., Ph.D.(Montr.) (joint appt. with Oncology and Medicine)

Albert Berghuis; B.Sc., M.Sc.(Rijks Univ. Groningen, The Netherlands), Ph.D.(Br. Col.) (Canada Research Chair in Structural Biology)

Rhoda Blostein; B.Sc., M.Sc., Ph.D.(McG.), F.R.S.C.

Philip E. Branton; B.Sc., M.Sc., Ph.D.(Tor.) (Gilman Cheney Professor of Biochemistry), F.R.S.C.

Peter E. Braun; B.Sc., M.Sc.(Br. Col.), Ph.D.(Calif., Berk.)
8.2 Programs Offered

The Department of Biochemistry offers training at both the M.Sc. and Ph.D. levels. There are a wide variety of areas in which special training for the Ph.D. can be obtained. The Department also offers two Interdepartmental options together with other University departments. The first is the Chemical Biology Graduate Option, offered jointly with the Departments of Chemistry and Pharmacology and Therapeutics. Information on this option can be found on the web at www.mcgill.ca/biochemistry.

Students interested in training in these options must first be accepted for graduate studies by one of the participating departments.

The Department concentrates on the following key areas of research: signal transduction; molecular genetics; gene regulation; oncogenes; structure, function and regulation of proteins; membrane structure, function and assembly; intracellular protein targeting; embryonic development; bioinformatics; chemical biology and cellular neurobiology. A summary of the research interest of faculty members is available on the Department’s website.

Funding

Prospective students are urged to make every effort to secure their own funding. All students accepted to the program must be financially supported either by their supervisor or through fellowships or awards. All applicants accepted by a member of Biochemistry, having at least one standing, will be eligible for a recruitment fellowship. Applications are not required. Applications may be made for a variety of fellowships administered by the University or by various private, provincial or federal agencies. Deadlines for completion of most fellowship applications vary from October to February for studies beginning the following September. For more information on fellowships and awards, see the Graduate and Postdoctoral Studies website, www.mcgill.ca/gps.

8.3 Admission Requirements

Admission is based on the candidate’s academic record, letters of recommendation, curriculum vitae and personal statement. A minimum grade point average of 3.2/4.0 (B+) is required. Files that do not meet the minimum requirement will not be considered.

Master’s Program

Candidates for the M.Sc. degree must hold a B.Sc. degree or its equivalent in Biochemistry or in related disciplines (e.g., biology, chemistry, physics, physiology, microbiology).

Doctoral Program

Candidates who have completed their M.Sc. degree may be admitted directly to the Ph.D. program. Candidates who are admitted to the M.Sc. program and who are interested in the Ph.D. may transfer directly to the Ph.D. program after successfully completing the transfer seminar (BIOC 701) and all course requirements. The M.Sc. thesis requirement is then waived.

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 the following:

TOEFL: Minimum score of 600, 250 on computer-based test, or 100 on an internet-based test with each component score of not less than 20.

GRE: Subject Test in Biochemistry, Cell and Molecular Biology with a minimum score of 550. (Not required, but strongly recommended.)
Admissions Requirements - Chemical Biology Option

As for the regular graduate programs of the participating departments, acceptance into the Chemical Biology Option consists of two steps:

1. Preliminary approval by the Department's Graduate Committee based on the student's transcript, references and other documents submitted with the application. The criteria for assessment at this level are the same as for the regular graduate programs of the participating departments.

2. Acceptance by an individual research director. For students wishing to participate in the Chemical Biology Option, the director must propose a research project for the student that provides training in the methods and philosophy of chemical biology. Project proposals are assessed by the Chemical Biology Program Committee.

8.4 Application Procedures

Applications will be considered upon receipt of:

1. application form;
2. curriculum vitae;
3. application fee ($100);
4. two official letters of recommendation from professors on letterhead;
5. two official transcripts;
6. test results (TOEFL/GRE) if applicable.

All information is to be submitted to the Admissions Officer, Department of Biochemistry. All applicants are encouraged to approach staff members during or before the application process since no students are accepted without a supervisor.

McGill’s online application form for graduate program candidates is available at www.mcgill.ca/gradapplicants/apply.

Dates for Guaranteed Consideration

For dates for guaranteed consideration, please consult the following website: www.mcgill.ca/gradapplicants/programs. Then select the appropriate program.

8.5 Program Requirements

Coursework

All students are required to complete (in addition to BIOC 696) a minimum of 6 credits of 500- or higher level courses as part of their M.Sc. or Ph.D. program, including at least one of BIOC 603, BIOC 604, BIOC 605, or EXMD 615. Other courses are chosen in consultation with the research director. The Graduate Admissions Committee may stipulate additional course work depending on the background of the candidate. BIOC 450 (Protein Structure and Function) and BIOC 454 (Nucleic Acids) are additional requirements for those who have not previously completed equivalent courses in their prior training.

Research Advisory Committee: Each student will have a supervisory committee that will monitor the progress of the studies.

Departmental Seminars: In addition to the above requirements, all M.Sc. and Ph.D. students must take one year of the departmental seminar course (BIOC 696, Seminars in Biochemistry). Members of the staff and visiting scientists present their work to the Department at weekly and bi-weekly intervals respectively throughout the academic year. All graduate students are required to attend all the above seminars and other informal seminars, and are encouraged to attend meetings of scientific communities.

Master's Program (45 credits)

The following requirements must be satisfied:

Required Courses (39 credits)

- BIOC 696 (3) Seminars in Biochemistry
- BIOC 697 (9) Thesis Research 1
- BIOC 698 (12) Thesis Research 2
- BIOC 699 (15) Thesis Research 3

Complementary Courses (6 credits)

At least three credits must be chosen from the following:

- BIOC 603 (3) Genomics and Gene Expression
- BIOC 604 (3) Macromolecular Structure
- BIOC 605 (3) Structural Biology and Proteomics
- EXMD 615 (3) Membrane Carbohydrates

Plus, additional credits, to a minimum of 6 total complementary course-credits, of 500- or higher level courses in biomedical and allied sciences.

Complementary courses are chosen in consultation with the research director. The Graduate Advisory Committee may stipulate additional coursework depending on the background of the candidate. BIOC 450 (Protein Structure and Function) and BIOC 454 (Nucleic Acids) are additional requirements for those who have not previously completed equivalent courses in their prior training.

The M.Sc. program usually requires a minimum of two years of study. Students in the M.Sc. program are required to complete all course requirements and submit a thesis.

Transfer from the M.Sc. to the Ph.D. Program

After 21 months students may transfer to the Ph.D. program only if all transfer requirements have been fulfilled. This includes completion of the Research Seminar 1 (BIOC 701) and the minimum of 9 course credits specified above, plus any additional course work stipulated by the Graduate Admissions Committee. The M.Sc. thesis requirement is then waived.

Ph.D. in Biochemistry

Required Course (3 credits)

- BIOC 696 (3) Seminars in Biochemistry

Complementary Courses (6 credits minimum)

At least 3 credits from the courses listed below plus additional credits to a minimum of 6 total complementary course credits of 500-level or higher courses in the biomedical and allied sciences, chosen in consultation with the research director.

- BIOC 603 (3) Genomics and Gene Expression
- BIOC 604 (3) Macromolecular Structure
- BIOC 605 (3) Structural Biology and Proteomics
- EXMD 615 (3) Membrane Carbohydrates

The Graduate Advisory Committee may stipulate additional course work depending on the background of the candidate. BIOC 450 (Protein Structure and Function) and BIOC 454 (Nucleic Acids) are additional requirements for those who have not previously completed equivalent courses in their prior training.

Comprehensives – Required

- BIOC 701 (0) Research Seminar 1
- BIOC 702 (0) Ph.D. Thesis Proposal
- BIOC 703 (0) Research Seminar 2

Students must complete BIOC 701 in the third term after admission to the program, BIOC 702 in the 5th or 6th term, and BIOC 703 approximately 6 months prior to submission of the Ph.D. thesis.

Thesis – Required
Program Requirements – Chemical Biology Option
The curriculum of the Chemical Biology Option is structured so that in completing the option, students also complete the course requirements for the regular graduate programs in their home departments. For this reason, program requirements are listed separately for each department, even though the 'core' content in Chemical Biology (9 lecture credits plus 2 or 4 seminar credits for each program) is the same for each. The course requirements for the Chemical Biology Option taken through the Biochemistry Department are available at www.mcgill.ca/biochemistry/chemicalbiology.

M.Sc. in Biochemistry – Chemical Biology Option/Concentration (47 credits)

<table>
<thead>
<tr>
<th>Required Course</th>
<th>(3 credits)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOC 696</td>
<td>(3) Seminars in Biochemistry</td>
</tr>
</tbody>
</table>

**Complementary Courses (11 credits)**
2 credits, two of the following courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOC 610</td>
<td>(1) Seminars in Chemical Biology 1</td>
</tr>
<tr>
<td>BIOC 611</td>
<td>(1) Seminars in Chemical Biology 3</td>
</tr>
<tr>
<td>CHEM 689</td>
<td>(1) Seminars in Chemical Biology 2</td>
</tr>
<tr>
<td>CHEM 690</td>
<td>(1) Seminars in Chemical Biology 4</td>
</tr>
</tbody>
</table>

at least 3 credits from the following courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 502</td>
<td>(3) Advanced Bio-Organic Chemistry</td>
</tr>
<tr>
<td>CHEM 503</td>
<td>(3) Drug Design and Development 1</td>
</tr>
<tr>
<td>or PHAR 503</td>
<td></td>
</tr>
</tbody>
</table>

at least 3 credits to be chosen from the following courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOC 603</td>
<td>(3) Genomics and Gene Expression</td>
</tr>
<tr>
<td>BIOC 604</td>
<td>(3) Macromolecular Structure</td>
</tr>
<tr>
<td>BIOC 605</td>
<td>(3) Structural Biology and Proteomics</td>
</tr>
<tr>
<td>EXMD 615</td>
<td>(3) Membrane Carbohydrate</td>
</tr>
</tbody>
</table>

plus additional credits, to a total of at least 11 complementary course credits from the following list:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 504</td>
<td>(3) Drug Design and Development 2</td>
</tr>
<tr>
<td>or PHAR 504</td>
<td></td>
</tr>
<tr>
<td>CHEM 522</td>
<td>(3) Stereoechemistry</td>
</tr>
<tr>
<td>CHEM 582</td>
<td>(3) Supramolecular Chemistry</td>
</tr>
<tr>
<td>CHEM 591</td>
<td>(3) Bioinorganic Chemistry</td>
</tr>
<tr>
<td>CHEM 621</td>
<td>(5) Reaction Mechanisms in Organic Chemistry</td>
</tr>
<tr>
<td>CHEM 629</td>
<td>(5) Organic Synthesis</td>
</tr>
<tr>
<td>CHEM 655</td>
<td>(4) Advanced NMR Spectroscopy</td>
</tr>
<tr>
<td>EXMD 510</td>
<td>(3) Bioanalytical Separation Methods</td>
</tr>
<tr>
<td>EXMD 602</td>
<td>(3) Techniques in Molecular Genetics</td>
</tr>
<tr>
<td>PHAR 562</td>
<td>(3) General Pharmacology 1</td>
</tr>
<tr>
<td>PHAR 563</td>
<td>(3) General Pharmacology 2</td>
</tr>
<tr>
<td>PHAR 707</td>
<td>(3) Molecular Pharmacology</td>
</tr>
</tbody>
</table>

**Thesis Component - Required (33 credits)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOC 695</td>
<td>(6) Thesis Research 1 (Chemical - Biology)</td>
</tr>
<tr>
<td>BIOC 698</td>
<td>(12) Thesis Research 2</td>
</tr>
<tr>
<td>BIOC 699</td>
<td>(15) Thesis Research 3</td>
</tr>
</tbody>
</table>

Ph.D. in Biochemistry – Chemical Biology Option/Concentration (45 credits)

<table>
<thead>
<tr>
<th>Required Courses</th>
<th>(7 credits)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOC 696</td>
<td>(3) Seminars in Biochemistry</td>
</tr>
<tr>
<td>BIOC 610</td>
<td>(1) Seminars in Chemical Biology 1</td>
</tr>
<tr>
<td>BIOC 611</td>
<td>(1) Seminars in Chemical Biology 3</td>
</tr>
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<td>CHEM 689</td>
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<tr>
<td>CHEM 690</td>
<td>(1) Seminars in Chemical Biology 4</td>
</tr>
</tbody>
</table>

**Complementary Courses (9 credits)**

at least 3 credits from the following courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 502</td>
<td>(3) Advanced Bio-Organic Chemistry</td>
</tr>
<tr>
<td>CHEM 503</td>
<td>(3) Drug Design and Development 1</td>
</tr>
<tr>
<td>or PHAR 503</td>
<td></td>
</tr>
</tbody>
</table>

at least 3 credits to be chosen from the following courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOC 603</td>
<td>(3) Genomics and Gene Expression</td>
</tr>
<tr>
<td>BIOC 604</td>
<td>(3) Macromolecular Structure</td>
</tr>
</tbody>
</table>

ExMD 615 (3) Structural Biology and Proteomics

plus additional credits, to a total of at least 9 complementary course credits from the following list:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 504</td>
<td>(3) Drug Design and Development 2</td>
</tr>
<tr>
<td>or PHAR 504</td>
<td></td>
</tr>
<tr>
<td>CHEM 522</td>
<td>(3) Stereoechemistry</td>
</tr>
<tr>
<td>CHEM 582</td>
<td>(3) Supramolecular Chemistry</td>
</tr>
<tr>
<td>CHEM 591</td>
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<td>(5) Reaction Mechanisms in Organic Chemistry</td>
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<tr>
<td>CHEM 629</td>
<td>(5) Organic Synthesis</td>
</tr>
<tr>
<td>CHEM 655</td>
<td>(4) Advanced NMR Spectroscopy</td>
</tr>
<tr>
<td>EXMD 510</td>
<td>(3) Bioanalytical Separation Methods</td>
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<tr>
<td>EXMD 602</td>
<td>(3) Techniques in Molecular Genetics</td>
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<td>(3) General Pharmacology 2</td>
</tr>
<tr>
<td>PHAR 707</td>
<td>(3) Molecular Pharmacology</td>
</tr>
</tbody>
</table>

Comprehensives – Required

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOC 701</td>
<td>(0) Research Seminar 1</td>
</tr>
<tr>
<td>BIOC 702</td>
<td>(0) Ph.D. Thesis Proposal</td>
</tr>
<tr>
<td>BIOC 703</td>
<td>(0) Research Seminar 2</td>
</tr>
</tbody>
</table>

Students must complete BIOC 701 in the third term after admission to the program, BIOC 702 in the 5th or 6th term, and BIOC 703 approximately 6 months prior to submission of the Ph.D. thesis.

**Thesis – Required**

M.Sc. in Biochemistry – Bioinformatics Option/Concentration (45 credits)

<table>
<thead>
<tr>
<th>Required Courses</th>
<th>(6 credits)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOC 696</td>
<td>(3) Seminars in Biochemistry</td>
</tr>
<tr>
<td>COMP 616</td>
<td>(3) Bioinformatics Seminar</td>
</tr>
</tbody>
</table>

**Complementary Courses (9 credits)**

3 credits to be chosen from the following courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOC 603</td>
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<td>BIOC 604</td>
<td>(3) Macromolecular Structure</td>
</tr>
<tr>
<td>BIOC 605</td>
<td>(3) Structural Biology and Proteomics</td>
</tr>
<tr>
<td>EXMD 615</td>
<td>(3) Membrane Carbohydrate</td>
</tr>
</tbody>
</table>

plus 6 credits from the following courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BINF 621</td>
<td>(3) Bioinformatics: Molecular Biology</td>
</tr>
<tr>
<td>BMDE 652</td>
<td>(3) Bioinformatics: Proteomics</td>
</tr>
<tr>
<td>BTEC 555</td>
<td>(3) Structural Bioinformatics</td>
</tr>
<tr>
<td>COMP 618</td>
<td>(3) Bioinformatics: Functional Genomics</td>
</tr>
<tr>
<td>PHGY 603</td>
<td>(3) Systems Biology and Biophysics</td>
</tr>
</tbody>
</table>

The Graduate Advisory Committee may stipulate additional course work depending on the background of the candidate. BIOC 450 (Protein Structure and Function) and BIOC 454 (Nucleic Acids) are additional requirements for those who have not previously completed equivalent courses in their prior training.

**Thesis Component - Required (30 credits)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOC 694</td>
<td>(3) Thesis Research 4</td>
</tr>
<tr>
<td>BIOC 698</td>
<td>(12) Thesis Research 2</td>
</tr>
<tr>
<td>BIOC 699</td>
<td>(15) Thesis Research 3</td>
</tr>
</tbody>
</table>

Ph.D. in Biochemistry – Bioinformatics Option/Concentration

<table>
<thead>
<tr>
<th>Required Courses</th>
<th>(6 credits)</th>
</tr>
</thead>
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</tr>
<tr>
<td>COMP 616</td>
<td>(3) Bioinformatics Seminar</td>
</tr>
</tbody>
</table>

**Complementary Courses (9 credits)**

3 credits to be chosen from the following courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
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</tr>
<tr>
<td>EXMD 615</td>
<td>(3) Membrane Carbohydrate</td>
</tr>
</tbody>
</table>

plus 6 credits from the following courses:
BINF 621 (3) Bioinformatics: Molecular Biology
BMDE 652 (3) Bioinformatics: Proteomics
BTEC 555 (3) Structural Bioinformatics
COMP 618 (3) Bioinformatics: Functional Genomics
PHGY 603 (3) Systems Biology and Biophysics

The Graduate Advisory Committee may stipulate additional course work depending on the background of the candidate.

BIOC 450 (Protein Structure and Function) and BIOC 454 (Nucleic Acids) are additional requirements for those who have not previously completed equivalent courses in their prior training.

**Comprehensives – Required**
BIOC 701 (0) Research Seminar 1
BIOC 702 (0) Ph.D. Thesis Proposal
BIOC 703 (0) Research Seminar 2

Students must complete BIOC 701 in the third term after admission to the program, BIOC 702 in the 5th or 6th term, and BIOC 703 approximately 6 months prior to submission of the Ph.D. thesis.

**Thesis - Required**

### 8.6 Courses

Students preparing to register should consult Class Schedule on the web at www.mcgill.ca/student-records/register/class-schedule for the most up-to-date list of courses available; courses may have been added, rescheduled or cancelled after this Calendar was published. Class Schedule lists courses by term and includes days, times, locations, and names of instructors.

**Term(s) offered:** (Fall, Winter, Summer) may appear after the credit weight to indicate when a course would normally be taught. Please check Class Schedule to confirm this information.

**Note:** All undergraduate courses administered by the Faculty of Science (courses at the 100 to 500 level) have limited enrolment. The course credit weight is given in parentheses after the title.

★ Denotes courses taught only in alternate years.

◆ Denotes limited enrolment

◆ **BIOC 603 GENOMICS AND GENE EXPRESSION.** (3) (Fall) (Prerequisites: BIOC 454 and permission of instructor.) Examination of recent developments in analysis of eukaryotic cell genomes and control of gene expression. Molecular genetics; genomics and the bioinformatics of analysis of genomic and functional-genomic data; mechanisms and signal-transduction pathways for regulation of gene expression; applications to human disease.

★ **BIOC 604 MACROMOLECULAR STRUCTURE.** (3) (Winter) (Pre-requisite: BIOC 450 or equivalent) (Lectures in French and English) (Offered in the Fall term, in even alternate years.) X-Ray crystallography, NMR spectroscopy, computational methods and theoretical approaches to the determination and analysis of macromolecular structures. Theory and practical applications will be covered. Examples will include interpretation of structure as it applies to biological functions. In conjunction with the Université de Montréal.

◆ **BIOC 605 STRUCTURAL BIOLOGY AND PROTEOMICS.** (3) (Winter) (Prerequisite: BIOC 450 or equivalent, or permission of instructor.) Examination of recent developments in structural biology and proteomics analysis. Diffraction, NMR and modelling approaches to macromolecular structure; biophysical, proteomics and related approaches to characterize the physical and functional interactions of biological macromolecules; applications to biological problems.

**BIOC 610 SEMINARS IN CHEMICAL BIOLOGY 1.** (1) (Restrictions: Open only to students registered for the M.Sc. or Ph.D. Graduate Option in Chemical Biology.) First multidisciplinary seminar in chemical biology.

**BIOC 611 SEMINARS IN CHEMICAL BIOLOGY 3.** (1) (Restrictions: Open only to students registered for the M.Sc. or Ph.D. Graduate Option in Chemical Biology.) Third multidisciplinary seminar in chemical biology.

**BIOC 694 THESIS RESEARCH 4.** (3) (Restriction: Open to students enrolled in the M.Sc. in Biochemistry (Bioinformatics Option) program.) Laboratory research focusing on the thesis research project for the M.Sc. degree in Biochemistry; Bioinformatics Option.

**BIOC 695 THESIS RESEARCH 1 (CHEMICAL - BIOLOGY).** (6) (Restrictions: Open only to students registered for the M.Sc. Graduate Option in Chemical Biology.) Research toward completion of thesis.

**BIOC 696 SEMINARS IN BIOCHEMISTRY.** (3) (Restriction: Open to M.Sc. and Ph.D. Biochemistry students only.) Seminars in biochemistry.

**BIOC 696D1 (1.5), BIOC 696D2 (1.5) SEMINARS IN BIOCHEMISTRY.** (Students must register for both BIOC 696D1 and BIOC 696D2.) (No credit will be given for this course unless both BIOC 696D1 and BIOC 696D2 are successfully completed in consecutive terms.) Seminars in biochemistry.

**BIOC 697 THESIS RESEARCH 1.** (9)

**BIOC 698 THESIS RESEARCH 2.** (12)

**BIOC 699 THESIS RESEARCH 3.** (15)

**BIOC 701 RESEARCH SEMINAR 1.** (0) (Biochemistry graduate students) Presentation on original current laboratory research carried out by student.

**BIOC 702 PH.D. THESIS PROPOSAL.** (0) (Biochemistry graduate students) Dissertation presented to Committee.

**BIOC 703 RESEARCH SEMINAR 2.** (0) (Restriction: Ph.D. students in Biochemistry) Presentation of the planned thesis including central findings and original contribution to knowledge in the field of research.

**ADVANCED UNDERGRADUATE COURSES**

**BIOC 404 BIOPHYSICAL CHEMISTRY.** (3) (Winter) (Prerequisites: CHEM 204, CHEM 214 or equivalent) (Restriction: Not open to students who have taken or are taking CHEM 404.) Hydrodynamic and electrophoretic methods for separation and characterization of macromolecules. Optical and magnetic resonance spectroscopy of biopolymers, and applications to biological systems.

**BIOC 450 PROTEIN STRUCTURE AND FUNCTION.** (3) (Fall) (Prerequisites: BIOC 311, BIOC 312 and/or sufficient organic chemistry.) (Restriction: Intended primarily for students at the U3 level) Primary, secondary, tertiary and quaternary structure of enzymes. Active site mapping and site-specific mutagenesis of enzymes. Enzyme kinetics and mechanisms of catalysis. Multienzyme complexes.

**BIOC 454 NUCLEIC ACIDS.** (3) (Fall) (Prerequisites: BIOC 311, BIOC 312 or permission of instructor) Chemistry of RNA and DNA, transcription and splicing of RNA and their control; enzymology of DNA replication. Special topics on transgenics, genetic diseases and cancer.

**BIOC 455 NEUROCHEMISTRY.** (3) (Winter) (Prerequisites: BIOC 311, BIOC 312 or permission of instructor) Covers biochemical mechanisms underlying central nervous system function. Introduces basic neuroanatomy, CNS cell types and morphology, neuronal excitability, chemically mediated transmission, glial function. Biochemistry of specific neurotransmitters, endocrine effects on brain, brain energy metabolism and cerebral ischemia (stroke). With examples, where relevant, of biochemical processes disrupted in human CNS disease.

**BIOC 458 MEMBRANES AND CELLULAR SIGNALING.** (3) (Winter) (Prerequisites: BIOC 212, ANAT 262; one of PHGY 201, PHGY 209 or BIOL 205; one of BIOC 312 or ANAT 365; and BIOC 311 or permission of instructors) (Restriction: This course is also listed as ANAT 458. Not open to students who have taken or are taking ANAT 458 or BIOC 456) An integrated treatment of the properties of biological membranes and of intracellular signaling, including the major role that membranes play in transducing and integrating
9 Bioethics

For information, write to:
Chair, Master's Specialization in Bioethics
Biomedical Ethics Unit
3647 Peel Street
Montreal, QC H3A 1X1
Canada
Telephone: 514-398-6980
Fax: 514-398-8349
Website: www.mcgill.ca/biomedicalethicsunit/masters

9.1 Staff
E. Bereza; B.A., M.D., C.M.(McG.), C.C.F.P.(C)
A. Campbell; B.A., LL.B., B.C.L.(McG.), LL.M.(Harv.)
C. Els; R.R.T.(VGH), M.A., Ph.D.(Tenn.)
J.R. Fishman; B.A.(Calif., Berk.), Ph.D.(Calif., SF)
K.C. Glass; A.M.(Chic.), LL.B., B.C.L., D.C.L.(McG.)
N. Gilmore; B.A.(College of the Holy Cross), Ph.D.(Lond.), M.D.(Vt.)
J. Kimmelman; B.S.(Duke), Ph.D.(Yale)
N.B. King; B.A.(Penn.), M.A., Ph.D.(Harv.)
L. Turner; B.A.(Winn.), M.A.(Manit.), M.A., Ph.D.(S. Calif.)

9.2 Programs Offered

Master's Specialization in Bioethics.
The Master's Specialization in Bioethics is sponsored by the:
Faculty of Medicine, Division of Experimental Medicine;
Faculty of Law;
Faculty of Religious Studies; and
Faculty of Arts, Department of Philosophy.

Students receive an M.A., LL.M. or M.Sc. degree in the discipline chosen with a specialization in Bioethics.

9.3 Admission Requirements

M.D., bachelor's-level professional training in a health science, or bachelor's degree in law, philosophy or religious studies. Other students may be considered on an individual basis.

Enrolment is limited to 12 students.

9.4 Application Procedures

Applications are made initially through the Biomedical Ethics Unit in the Faculty of Medicine, which administers the program and teaches the core courses.

Applicants must be accepted by the appropriate Faculty, the Bioethics Graduate Studies Advisory Committee, and Graduate and Postdoctoral Studies.

McGill's online application form for graduate program candidates is available at www.mcgill.ca/gradapplicants/apply.

9.5 Program Requirements

The curriculum is composed of required courses (for 6 credits) offered in the Biomedical Ethics Unit, bioethics courses (3 credits minimum) offered by the base faculty or department and any graduate courses required or accepted by a base faculty for the granting of a master's degree, for a total of 21 credits. A minimum of 45 credits is required including the thesis.

Registration Requirements: Depending upon the requirements of the base discipline, a minimum of three terms is required for completion of the program, including course work and thesis.

Thesis Supervision: Thesis supervision for students in the specialization is provided by a participating faculty member in the program. Thesis examination will be conducted according to the base discipline and the Graduate and Postdoctoral Studies norms.

Required Courses – Biomedical Ethics Unit (6 credits)
BIOE 680 (3) Bioethical Theory
BIOE 681 (3) Bioethics Practicum

Required Course – base faculty (3 credits)
one of the following:
BIOE 682 (3) Medical Basis of Bioethics
CMPL 642 (3) Law and Health Care
PHIL 543 (3) Seminar: Medical Ethics
RELG 571 (3) Religion and Medicine

Complementary Courses (12 credits)
The remaining credits are to be taken in any graduate courses required or accepted by the base faculty for the granting of a master's degree.

Thesis Component – Required (24 credits)
BIOE 690 (3) Thesis Literature Survey
BIOE 691 (3) Thesis Research Proposal
BIOE 692 (6) Thesis Research Progress Report
BIOE 693 (12) Thesis

9.6 Courses

Students preparing to register should consult Class Schedule on the web at www.mcgill.ca/student-records/register/class-schedule for the most up-to-date list of courses available; courses may have been added, rescheduled or cancelled after this Calendar was published. Class Schedule lists courses by term and includes days, times, locations, and names of instructors.

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

BIOE 680 BIOETHICAL THEORY. (3) (Limited enrolment) A survey of some of the main problem areas and common argument forms used in current bioethics. Problem areas include consent, decisions to withhold or withdraw treatment, allocation of scarce resources, research with human subjects and confidentiality. Argument forms include those drawn from diverse ethical theories and traditions.

BIOE 681 BIOETHICS PRACTICUM. (3) (Limited enrolment) Four hours per week supervised placement within health care settings (e.g., intensive care, family practice, clinical ethics committees). In addition, students shall be assigned for the last month of the term to a single intensive placement. Participation in rounds, case discussions, and a weekly seminar.

BIOE 682 MEDICAL BASIS OF BIOETHICS. (3) (Limited enrolment) The seminar examines the medical basis of timely ethical dilemmas in health care. Content includes: clinical concepts of pathogenesis, disease, screening, diagnosis, therapeutic interventions and prognosis; decision-making in clinical care and institutional policy development; organization of health care systems including socialized medicine, public health and institutions providing health care; medical research.

BIOE 690 M.Sc. THESIS LITERATURE SURVEY. (3)
BIOE 691 M.Sc. THESIS RESEARCH PROPOSAL. (3)
BIOE 692D1 (3), BIOE 692D2 (3) M.Sc. Thesis Research Progress Report. (Students must register for both BIOE 692D1 and BIOE 692D2) (No credit will be given for this course unless both BIOE 692D1 and BIOE 692D2 are successfully completed in consecutive terms) (BIOE 692D1 and BIOE 692D2 together are equivalent to BIOE 692)

BIOE 693 M.Sc. Thesis. (12)
BIOE 693D1 (6), BIOE 693D2 (6) M.Sc. Thesis. (Students must register for both BIOE 693D1 and BIOE 693D2) (No credit will be given for this course unless both BIOE 693D1 and BIOE 693D2 are successfully completed in consecutive terms) (BIOE 693D1 and BIOE 693D2 together are equivalent to BIOE 693)

BIOE 694 Independent Studies. (3)

BASE FACULTY COURSES

BIOE 682 Medical Basis of Bioethics. (3) (Limited enrolment)
The seminar examines the medical basis of timely ethical dilemmas in health care. Content includes: clinical concepts of pathogenesis, disease, screening, diagnosis, therapeutic interventions and prognosis; decision-making in clinical care and institutional policy development; organization of health care systems including socialized medicine, public health and institutions providing health care; medical research.

CMPL 642 Law and Health Care. (3) (Limited enrolment)
The study of legal and ethical issues raised in medicine and healthcare with a particular focus upon the relationship between patient and healthcare professionals.

PHIL 543 Seminar: Medical Ethics. (3) (Prerequisite: PHIL 343 or written permission of the instructor) (Restriction: Seminars are open only to graduate students and final year Philosophy Majors, Honours and Joint Honours students, except by written permission of the Department) An advanced course devoted to a particular philosophical problem as it arises in the context of medical practice or the application of medical technology.

RELG 571 Religion and Medicine. (3) (Fall) A study of the resources of major world religions (Judaism, Christianity, Islam, Hinduism, Buddhism, Taoism and Shinto) for thinking about ethical issues related to modern medicine, e.g., health, illness, suffering; new reproductive technologies; genetic engineering; euthanasia; palliative care; animal research; transplants.

10 Biology

Department of Biology
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Website: http://biology.mcgill.ca

Chair — Paul F. Lasko
Chair of Graduate Program — Richard Roy

10.1 Staff

Emeritus Professors

A. Howard Bussey; B.Sc., Ph.D.(Brist.), F.R.S.C.
Robert L. Carroll; B.Sc.(Mich.), M.A., Ph.D.(Harv.), F.R.S.C.
F. Clarke Fraser; O.C., B.Sc.(Acad.), M.Sc., Ph.D.,
M.D., C.M.(McG.), D.Sc.(Acad.), F.R.S.C., F.R.C.P.S.(C)
(Molson Emeritus Professor of Genetics) (joint app't. with Human Genetics)
Sarah P. Gibbs; A.B., M.S.(C'nell), Ph.D.(Harv.), F.R.S.C.
(Macdonald Emeritus Professor of Botany)

Jacob Kalff; M.S.A.(Tor.), Ph.D.(Ind.)
John B. Lewis; B.Sc., M.Sc., Ph.D.(McG.)
Gordon A. MacLauchlan; B.Sc., M.A.(Sask.), Ph.D.(Manit.), F.R.S.C.
(Macdonald Emeritus Professor of Botany)
Barid B. Mukherjee; B.Sc.(Calc.), M.S.(Brig.Young), Ph.D.(Utah)
(joint app't. with Human Genetics)
Rolf O. Sattler; B.Sc.(Tübingen), Ph.D.(Munich), F.R.S.C.

Professors

Graham A.C. Bell; B.A., D.Phil.(Oxf.), F.R.S.C.(James McGill Professor)
Gregory G. Brown; B.Sc.(Notre Dame), Ph.D.(CUNY)
Lauren Chapman; B.Sc.(Alta.), Ph.D.(McG.)
Ronald Chase; A.B.(Stan.), Ph.D.(MIT)
Rajinder S. Dhindsa; B.Sc., M.Sc.(Punj.), Ph.D.(Wash.)
Siegfried Hekimi; M.Sc., Ph.D.(Geneva)
Donald L. Kramer; B.Sc.(Boston Coll.), Ph.D.(Br. Col.)
Paul F. Lasko; A.B.(Harv.), Ph.D.(MIT) (Molson Professor of Genetics) (Associate Member in Anatomy & Cell Biology)
Martin J. Lechowicz; B.A.(Mich. St.), M.S., Ph.D.(Wis.)
Louis Lefebvre; B.Sc., M.A., Ph.D.(Montr.)
Michel Loreau; M.Sc., Ph.D.(Free Univ., Brussels)
Gerald S. Pollack; M.A., Ph.D.(Princ.) (on sabbatical)
Catherine Potvin; B.Sc., M.Sc.(Montr.), Ph.D.(Duke)
Rima Rozen; B.Sc., Ph.D.(McG.) (James McGill Professor)
Daniel J. Schoen; B.Sc., M.Sc.(Mich.), Ph.D.(Calif.) (Macdonald Professor of Botany)

Associate Professors

Thomas E. Bureau; B.Sc.(Calif.), Ph.D.(Texas) (William Dawson Scholar)
Joseph A. Dent; B.Sc.(Mich.), Ph.D.(Col.)
François Fagotto; Ph.D.(Neuchâtel)
Gregor Fussmann; Dipl.(Berlin), Ph.D.(Max-Planck-Institute)
Andrew Gonzalez; B.Sc.(U. Nott.), Ph.D.(Imperial College, Lond.) (on sabbatical)
Andrew Hendry; B.Sc.(Vic. (BC)), M.Sc., Ph.D.(Wash.) (joint app't. with Redpath Museum)
Robert L. Levine; B.Sc.(Brooklyn), M.Sc., Ph.D.(Yale)
Laura Nilson; B.A.(Colgate), Ph.D.(Yale) (Canada Research Chair in Genetics)
Neil M. Price; B.Sc.(New Br.), Ph.D.(Br. Col.)
Richard Roy; B.Sc.(Bishop’s), Ph.D.(Laval) (on sabbatical)
Monique Zetka; B.Sc., Ph.D.(Br. Col.) (on sabbatical)

Assistant Professors

Ehab Abouheif; M.Sc.(C’dia), Ph.D.(Duke)
Gary Brouhard; M.S.E., Ph.D.(Mich.)
David Dankort; B.Sc., Ph.D.(McM.)
Irene Gregory-Eaves; B.Sc.(Vic. (BC)), M.Sc., Ph.D.(Qu.) (on leave)
Frédéric Guichard; B.Sc.(Montr.), Ph.D.(Laval)
Paul Harrison; B.Sc.(NUI), Ph.D.(Lond.)
Rudiger Krahe; Dipl.(Alexander U.), Ph.D.(Humboldt)
Brian Leung; B.Sc.(Br. Col.), Ph.D.(Car.)
Nam-Sung Moon; B.Sc., Ph.D.(McG.)
Frieder Schoeck; Dipl.(Erangen), Ph.D.(Max Planck Institute)
Jacelyn Vogel; M.Sc.(E.III.), Ph.D.(Kansas)
Tamara Western; B.Sc.(Dal.), Ph.D.(Br. Col.) (on sabbatical)
Hugo Zheng; M.Sc.(Helsinki), Ph.D.(Oxf. Brookes)

Associate Members

Anatomy and Cell Biology: Craig Mandato

Belairs: Judith Mendes

Centre for Research in Neuroscience: Sal Carbonetto, Robert Dunn, Yong Raa, Donald Van Meyel

Dept. of Human Genetics, Chair: David Rosenblatt

MCH: Feige Kaplan

MNI: Kenneth Hastings

MSE: Colin Chapman

Physics: Maria Kilfoil

RVH: Hugh J. Clarke, Daniel Dufort, Teruko Taketo

Redpath Museum: Claire de Mazancourt, David Green, Hans Larsson, Virgine Millien, Anthony Ricciardi
10.2 Programs Offered

The Department offers graduate training in many areas of biology with particular strengths in the following areas: Molecular Biology & Genetics; Cell & Developmental Biology; Ecology, Biodiversity & Conservation; Evolution; Neurobiology; Bioinformatics; and Plant Biology. A Bioinformatics option is offered jointly with several other University departments as well as an Environment option and a Neotropical Environment option.

Graduate programs leading to the M.Sc. and Ph.D. degrees are offered. The emphasis in both programs is on development of the intellectual and technical skills necessary for independent research. The main component of both degrees is a thesis embodying the results of original research. Formal course requirements are few and are largely intended to fill gaps in the student's background.

The Stewart Biological Sciences Building is well equipped for graduate training and research in a wide variety of areas of biology. Its resources are greatly extended by affiliation with other organizations such as the Redpath Museum; the Groupe Interuniversitaire de Recherches Océanographiques du Québec (GIROQ); the Biotechnology Research Institute of the National Research Council of Canada; Macdonald Campus; the Montreal Neurological Institute; the Jewish General Hospital; the Montreal General, Montreal Children's and Royal Victoria Hospitals. Field research facilities include the Mont St. Hilaire Field Station (Quebec); the Huntsman Marine Science Centre (New Brunswick); the Subarctic Research Laboratory (Quebec); the Bellairs Research Institute (Barbados); and the Memphremagog Field Station (Quebec).

The Department specifies a minimum level of support for all graduate students. This amount is $15,500 per annum plus tuition fees. The required minimum duration of support is two years for the M.Sc. program, five years for a Ph.D. student entering as Ph.D. 1 (from a bachelor's) and four years for a Ph.D. student entering as Ph.D. 2.

10.3 Admission Requirements

Applicants must have a B.Sc. in a discipline relevant to the proposed field of study with an overall cumulative grade point average (CGPA) of 3.0/4.0 or a CGPA of 3.2/4.0 for the last two full-time academic years. Graduate Record Examination (GRE) scores are not required, but may be submitted. The Test of English as a Foreign Language (TOEFL) is required of 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). A score of 550 on the paper-based TOEFL (213 on the computer-based test, or 86 on the internet-based test with each component score not less than 20) or 6.5 on IELTS, is the minimum standard for admission.

Admission is based on an evaluation by the Graduate Training Committee and on acceptance by a research director who can provide adequate funding for personal and research expenses. Prospective graduate students are encouraged to contact staff members with whom they wish to study before applying for admission.

10.4 Application Procedures

Application to the graduate program in Biology is made using an online web application form (a direct link to the online form is on the Department website).

All applicants should read the academic faculty and admission procedure sections on the Biology Department website before completing the application form. These guidelines contain specific information on the application process, summaries of the research areas of staff and contact information.

10.5 Program Requirements

The graduate program of each student is established and regularly evaluated by a three-member supervisory committee appointed by the Graduate Training Committee and chaired by the student’s thesis supervisor.

All graduate students are required to participate regularly in the various seminar series and journal clubs offered by the Department.

MASTER’S REQUIREMENTS

Length of Program – Three full-time terms of resident study at McGill University is the minimum time requirement to complete the master's degree. The normal and expected duration is two years.

Course Requirements – Forty-five credits are required for the M.Sc. degree; 48 credits if the Environment, Neotropical Environment or Bioinformatics Options are selected. Additional course work may be required if the student's background is insufficient.

A graduate pass (B- or better) is mandatory for all courses required for the M.Sc. Students may take additional courses not required for degree purposes, but they must maintain an overall average of B- or better, including marks in courses that are not required.

Thesis – In Biology, the M.Sc. is considered to be a research degree and the candidate must present a thesis which should contain original contributions to knowledge.

M.Sc. in Biology (45 credits)

Additional course work may be required if the student's background is insufficient.

Complementary Courses (6 credits)

two 3-credit courses, or equivalent, at the 500 level or higher in Biology or other departments, and approved by the Supervisory Committee.

Thesis (39 credits)

BIOL 697 (13) Master's Thesis Research 1
BIOL 698 (13) Master's Thesis Research 2
BIOL 699 (13) Master's Thesis Research 3

M.Sc. in Biology – Environment Option (48 credits)

Required Courses (6 credits)

ENVR 610 (3) Foundations of Environmental Policy
ENVR 650 (1) Environmental Seminar 1
ENVR 651 (1) Environmental Seminar 2
ENVR 652 (1) Environmental Seminar 3

Complementary Course (3 credits)

3 credits, one of the following courses:

ENVR 519 (3) Global Environmental Politics
ENVR 544 (3) Environmental Measurement and Modelling
or another graduate course at the 500 level or higher recommended by the advisory committee and approved by the Environment Option Committee

Thesis (39 credits)
BIOL 697 (13) Master's Thesis Research 1
BIOL 698 (13) Master's Thesis Research 2
BIOL 699 (13) Master's Thesis Research 3

M.Sc. in Biology – Neotropical Environment Option (48 credits)

Required Courses (6 credits)
BIOL 640 (3) Tropical Biology and Conservation
ENVR 610 (3) Foundations of Environmental Policy

Complementary Course (3 credits)
3 credits, one of the following courses:
AGRI 550 (3) Sustained Tropical Agriculture
BIOL 553 (3) Neotropical Environments
BIOL 641 (3) Issues in Tropical Biology
ENVR 611 (3) The Economy of Nature
ENVR 612 (3) Tropical Environmental Issues
ENVR 680 (3) Topics in Environment 4
POLI 644 (3) Tropical Environmental Politics
SOCI 565 (3) Social Change in Panama

Thesis (39 credits)
BIOL 697 (13) Master's Thesis Research 1
BIOL 698 (13) Master's Thesis Research 2
BIOL 699 (13) Master's Thesis Research 3

Participation in the MSE-Panama Symposium presentation in Montreal is also required.

M.Sc. in Biology – Bioinformatics Option (48 credits)

Required Courses (3 credits)
COMP 616 (3) Bioinformatics Seminar

Complementary Courses (6 credits)
6 credits from the following courses:
BINF 621 (3) Bioinformatics: Molecular Biology
BMDE 652 (3) Bioinformatics: Proteomics
BTEC 555 (3) Structural Bioinformatics
COMP 618 (3) Bioinformatics: Functional Genomics
PHGY 603 (3) Systems Biology and Biophysics

Thesis (39 credits)
BIOL 697 (13) Master's Thesis Research 1
BIOL 698 (13) Master's Thesis Research 2
BIOL 699 (13) Master's Thesis Research 3

Transfer from M.Sc to Ph.D. Program – The student's Supervisory Committee may recommend to the Graduate Training Committee that the student be permitted to transfer to the Ph.D. program. This is normally done at the end of the first year of the master's program. Students who transfer into the Ph.D. program are required to take their Ph.D. Qualifying Examination within eight months of the transfer.

PH.D. REQUIREMENTS

Length of Program – Candidates entering Ph.D. 1 must complete at least three years of full-time resident study (6 terms). The normal and expected duration of the Ph.D. program is 4-5 years. A student who has obtained a master's degree at McGill, or at an approved institution elsewhere may, upon the recommendation of the Graduate Training Committee, enter at the Ph.D. 2 level.

Ph.D. Qualifying Examination – The Qualifying Examination is a formal evaluation of the student’s ability to proceed to the attainment of the Ph.D. Students must pass the Qualifying Examination (BIOL 700) no later than 15 months from the date of registration in the program. Students who transfer from the master's program must take the exam within 8 months. Students who enter the Ph.D. program after completing an M.Sc. in Biology at McGill must take the exam within 12 months.

Ph.D. Seminar – All Ph.D. students must deliver a research seminar (BIOL 702) at some time during the academic session (September-April) towards the end of their studies and preferably at least 3 months prior to the thesis submission.

Thesis – The Ph.D. is a research degree. The candidate must present a thesis which represents high scholastic attainment in a specialized field, demonstrated by independent and original research. After the thesis has been submitted and approved, the candidate is required to orally defend their thesis in an open forum.

Ph.D. in Biology

Complementary Courses (6 credits)
two 3-credit courses, or equivalent, at the 500 level or higher in Biology or other departments, and approved by the Supervisory Committee.

Seminar Required
BIOL 702 (6) Ph.D. Seminar

Qualifying Exam Required
BIOL 700 Doctoral Qualifying Examination

Thesis Required

Ph.D. in Biology – Developmental Biology

Required Courses (6 credits)
BIOL 520 (3) Gene Activity in Development
BIOL 532 (3) Developmental Neurobiology Seminar

Complementary Course (3 credits)
3 credits, one of the following courses:
BIOL 544 (3) Genetic Basis of Life Span
BIOL 569 (3) Developmental Evolution
BIOL 592 (3) Integrated Bioinformatics
EXMD 607 (3) Molecular Control of Cell Growth
EXMD 608 (3) Molecular Embryology
HGEN 692 (3) Human Genetics
NEUR 605 (3) Neuroscience Seminar 4

or another graduate course at the 500 level or higher chosen in consultation with the student’s supervisor.

Additional courses may be required if the student's background is deemed insufficient.

Seminar Required
BIOL 702 (6) Ph.D. Seminar

Qualifying Exam Required
BIOL 700 Doctoral Qualifying Examination

Thesis Required

Ph.D. in Biology – Environment Option

Required Courses (6 credits)
ENVR 610 (3) Foundations of Environmental Policy
ENVR 650 (1) Environmental Seminar 1
ENVR 651 (1) Environmental Seminar 2
ENVR 652 (1) Environmental Seminar 3

Complementary Course (3 credits)
3 credits, one of the following courses:
ENVR 519 (3) Global Environmental Politics
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credit (Term)</th>
<th>Term</th>
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<tbody>
<tr>
<td>ENVR 544</td>
<td>Environmental Measurement and Modelling</td>
<td>(3)</td>
<td></td>
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<tr>
<td>ENVR 580</td>
<td>Topics in Environment 3</td>
<td>(3)</td>
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</tr>
<tr>
<td>ENVR 611</td>
<td>The Economy of Nature</td>
<td>(3)</td>
<td></td>
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<td>ENVR 620</td>
<td>Environment and Health of Species</td>
<td>(3)</td>
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<td>ENVR 622</td>
<td>Sustainable Landscapes</td>
<td>(3)</td>
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<td>ENVR 630</td>
<td>Civilization and Environment 1</td>
<td>(3)</td>
<td></td>
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<tr>
<td>ENVR 680</td>
<td>Topics in Environment 4</td>
<td>(3)</td>
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</tbody>
</table>

or another graduate course at the 500 level or higher recommended by the advisory committee and approved by the Environment Option Committee.

Seminar Required
- BIOL 702 (6) Ph.D. Seminar

Qualifying Exam Required
- BIOL 700 Doctoral Qualifying Examination

Thesis Required

Ph.D. in Biology – Neotropical Environment Option

Required Courses (6 credits)
- BIOL 640 (3) Tropical Biology and Conservation
- ENVR 610 (3) Foundations of Environmental Policy

Complementary Course (3 credits)
- 3 credits, one of the following courses:
  - AGRI 550 (3) Sustained Tropical Agriculture
  - BIOL 553 (3) Neotropical Environments
  - BIOL 641 (3) Issues in Tropical Biology
  - ENVR 611 (3) The Economy of Nature
  - ENVR 612 (3) Tropical Environmental Issues
  - ENVR 680 (3) Topics in Environment 4
  - POLI 644 (3) Tropical Environmental Politics
  - SOCI 565 (3) Social Change in Panama

Seminar Required
- BIOL 702 (6) Ph.D. Seminar

Qualifying Exam Required
- BIOL 700 Doctoral Qualifying Examination

Thesis Required

Participation in the MSE-Panama Symposium presentation in Montreal is also required.

Ph.D. in Biology – Bioinformatics Option

Seminar - Required (6 credits)
- BIOL 702 (6) Ph.D. Seminar

Qualifying Exam Required
- BIOL 700 Doctoral Qualifying Examination

Required Course (3 credits)
- COMP 616 (3) Bioinformatics Seminar

Complementary Courses (6 credits)
- 6 credits from the following courses:
  - BINF 621 (3) Bioinformatics: Molecular Biology
  - BMDE 652 (3) Bioinformatics: Proteomics
  - BTEC 555 (3) Structural Bioinformatics
  - COMP 618 (3) Bioinformatics: Functional Genomics
  - PHGY 603 (3) Systems Biology and Biophysics

Thesis Required

10.6 Courses

Students preparing to register should consult Class Schedule on the web at www.mcgill.ca/student-records/register/class-schedule for the most up-to-date list of courses available; courses may have been added, rescheduled or cancelled after this Calendar was published. Class Schedule lists courses by term and includes days, times, locations, and names of instructors.

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

★ Denotes courses taught only in alternate years.

★ BIOL 505 DIVERSITY AND SYSTEMATICS SEMINAR. (3) (Winter) (3 hours seminar) (Prerequisites: BIOL 215 and BIOL 304 or permission) A course dealing in depth with a particular aspect of biological diversity and/or systematics. Topics may include the systematics of a particular taxon, issues in biodiversity, systematics theory and practice, etc. The class will discuss aspects of the chosen topic and prepare individual seminar reports.

★ BIOL 507 ANIMAL COMMUNICATION. (3) (Fall) (3 hours lecture) (Corequisites: BIOL 307 or equivalent and one of BIOL 306 or NEUR 310 or NSCI 200 or NSCI 201 or PHGY 311; or permission of instructor. Since all corequisites may not be offered in the same term, students are advised that they may have to plan their schedules so that they may register in these courses in the term prior to BIOL 507.) Introduction to communication between animals, including humans. Physical and phylogenetic constraints on the evolution of communication systems will be discussed. The approach to communication will draw from behavioural ecology, psychology, physiology and physics.

★ BIOL 510 ADVANCES IN COMMUNITY ECOLOGY. (3) (Fall) (3 hours lecture/seminar) (Prerequisites: BIOL 308 or GEOG 350 or permission of instructor.) The origin, maintenance and roles of biological diversity within ecological communities.

★ BIOL 518 ADVANCED TOPICS IN CELL BIOLOGY. (3) (Winter) (2 hours seminar) (Prerequisite: BIOL 313 and permission) Conserved processes in Eukaryotic organisms, including the cytoskeleton, the cell cycle, complex traits/disease, global analysis/bioinformatics, and innovative studies/techniques in cell biology.

★ BIOL 520 GENE ACTIVITY IN DEVELOPMENT. (3) (Winter) (3 hours lecture and discussion) (Prerequisites: BIOL 300 and BIOL 303 or permission) An analysis of the role and regulation of gene expression in several models of eukaryotic development. The emphasis will be on critical evaluation of recent literature concerned with molecular or genetic approaches to the problems of cellular differentiation and determination. Recent research reports will be discussed in conferences and analyzed in written critiques.

★ BIOL 524 TOPICS IN MOLECULAR BIOLOGY. (3) (Fall) (Prerequisites: BIOL 300 and BIOL 303 or permission.) Molecular genetics and molecular, cellular and developmental biology, including signal transduction, cell differentiation and function, genetic diseases in eukaryotes.

★ BIOL 530 ADVANCES IN NEUROETHOLOGY. (3) (Winter) (3 hours seminar) (Prerequisite: BIOL 306 or NSCI 200 or NSCI 201 or PHGY 311 or permission of instructor.) Neuronal mechanisms underlying behaviour in vertebrate and invertebrate organisms.

★ BIOL 532 DEVELOPMENTAL NEUROBIOLOGY SEMINAR. (3) (Winter) (1 hour lecture, 2 hours seminar) (Prerequisites: BIOL 303 or BIOL 306 or permission of instructor) Discussions of all aspects of nervous system development including pattern formation, cell lineage, pathfinding and targeting by growing axons, and neuronal regeneration. The basis for these discussions will be recent research papers and other assigned readings.

★ BIOL 540 ECOLOGY OF SPECIES INVASIONS. (3) (Winter) (3 hours lecture) (Prerequisite: BIOL 306 or permission of instructor) (Restriction: Not open to U1 or U2 students) (Restriction: Not open to students who are taking or have taken ENVR 540.) Causes and consequences of biological invasion, as well as risk assessment methods and management strategies for dealing with invasive species.

★ BIOL 544 GENETIC BASIS OF LIFE SPAN. (3) (Fall) (1 hour lecture, 2 hours seminar) (Prerequisites: BIOL 202, BIOL 300; BIOL 303 recommended or permission) The course will consider how gene action is determining the duration of life in various organisms focusing on the strengths and limitations of the genetic approach. The course will focus particularly on model organisms such as yeast, Caenorhabditis, Drosophila and mouse, as well as on the characterization of long-lived people.
BIOL 553 NEOTROPICAL ENVIRONMENTS. (3) (Winter) (24 hours lecture and 36 hours field work over a 4-week period) (Prerequisites: HISP 218, MATH 203, and BIOL 308, or equivalents, and permission of Program Coordinator.) (Corequisites: ENVR 451, GEOG 498 and AGRI 550.) (Restriction: location in Panama. Students must register for a full semester of studies in Panama) Ecology revisited in view of tropical conditions. Exploring species richness. Sampling and measuring biodiversity. Conservation status of ecosystems, communities and species. Indigenous knowledge.

★ BIOL 555D1 (1.5), ★ BIOL 555D2 (1.5) FUNCTIONAL ECOLOGY OF TREES. (Fall and Winter) (Prerequisites: BIOL 304, BIOL 308 or permission.) (Students must register for both BIOL 555D1 and BIOL 555D2.) (No credit will be given for this course unless both BIOL 555D1 and BIOL 555D2 are successfully completed in consecutive terms.) (BIOL 555D1 and BIOL 555D2 together are equivalent to BIOL 555.) Discussion of the interactions among traits that underpin the survival of woody plants in diverse environments: physiology, anatomy, architecture, seasonality and phenology, reproductive ecology, life history trade-offs, and the phylegetic basis of functional diversification.

BIOL 568 TOPICS ON THE HUMAN GENOME. (3) (Winter) (3 hours lecture) (Prerequisites BIOL 202, BIOL 300, BIOL 370, or permission.) Cellular and molecular approaches to characterization of the human genome.

★ BIOL 569 DEVELOPMENTAL EVOLUTION. (3) (Winter) (3 hours lecture) (Prerequisites: BIOL 303 and BIOL 304; or permission of instructor.) The influence of developmental mechanisms on evolution. This course draws on recent examples from plants and invertebrate and vertebrate animals. Topics include homology, modularity, dissociation, co-option, evolutionary novelty, evolution of cis-regulation and gene regulatory networks, developmental constraint and evolvability, heterochrony, phenotypic plasticity, and canalization.

BIOL 570 ADVANCED SEMINAR IN EVOLUTION. (3) (Fall or Winter) (3 hours seminar) (Restriction: Open to undergraduates by permission.) Detailed analysis of a topic in evolutionary biology, involving substantial original research.

★ BIOL 571 EXPERIMENTAL EVOLUTION/ECOLOGY. (3) (Winter) (1 hour lecture, 4 hours laboratory) (Prerequisite: BIOL 435 or equivalent) (Restriction: Restricted to U3 and Graduate students.) Basic principles and processes of evolution and ecology will be demonstrated using microbial model systems. Topics include mutation, fitness, selection, adaptive radiation, properties of mixtures and community assembly.

★ BIOL 572 MOLECULAR EVOLUTION. (3) (Fall) (3 hours lecture/seminar) (Prerequisite: BIOL 300) Evolutionary change in DNA and proteins and its implications for cellular, organismal, and population/species evolution.

BIOL 573 VERTEBRATE PALEONTOLOGY FIELD COURSE. (3) (Summer) (Prerequisites: BIOL 304 and BIOL 352 or permission of instructor.) (Notes: Spring field course with completed project and presentation by the end of the Summer. Given in a selected Late Cretaceous Alberta and/or Saskatchewan site. Enrolment limited to 15 students) Terrestrial vertebrate fossils (i.e., dinosaurs, crocodiles and other reptiles) and palaeocommunity analysis, including practical training with fossil identification, mapping, collecting, and stratigraphic interpretation.

BIOL 575 HUMAN BIOCHEMICAL GENETICS. (3) (Winter) (3 hours lecture) (Prerequisites: BIOL 202 and BIOL 300; or permission of the instructor) Topics on the study of human systems that have led to advances in basic biology.

★ BIOL 588 ADVANCES IN MOLECULAR/CELLULAR NEUROBIOLOGY. (3) (Fall) (1.5 hours lecture, 1.5 hours seminar) (Prerequisites: BIOL 300 and BIOL 306 or permission) Discussion of fundamental molecular mechanisms underlying the general features of cellular neurobiology. An advanced course based on lectures and on a critical review of primary research papers.

★ BIOL 590 LINKING COMMUNITY AND ECOSYSTEM ECOLOGY. (3) (Winter) (1.5 hours lecture, 1.5 hours seminar) (Prerequisite: BIOL 434 or permission of instructor.) Theoretical foundations for a new ecological synthesis that merges the perspectives of population, community, evolutionary and ecosystem ecology. Focus on theory in interaction with experimental and empirical work, and covers current topics at the interface between community and ecosystem ecology.

BIOL 592 INTEGRATED BIOINFORMATICS. (3) (Fall) (3 hours lecture) (Prerequisite: BIOL 301 or permission of instructor.) (Restriction: Not open to students who have taken or are taking BINF 511.) 'Post-genomic' bioinformatics. Concepts behind large-scale computational analysis and comparison of genomes/proteomes (and beyond), and the implications for our understanding of the basic processes of molecular and cell biology and the evolution of those processes.

★ BIOL 594 ADVANCED EVOLUTIONARY ECOLOGY. (3) (Fall) (Prerequisite: BIOL 304 and BIOL 308) (Restriction: U3 or permission.) Evolutionary ecology is the study of evolutionary change in natural populations. General predictive approaches in evolutionary ecology, including population genetics, quantitative genetics, optimality, and game theory will be examined. Emphasis will be placed on the mathematical underpinnings of each approach, particularly as they relate to classic and contemporary problems.

BIOL 632 LIMNOLOGY. (3) (2 hours lecture; 3 hours laboratory) (Prerequisites: BIOL 206 and/or permission) A study of the physical, chemical and biological properties of inland waters, with emphasis on their functioning as systems.

BIOL 640 TROPICAL BIOLOGY AND CONSERVATION. (3) (Restriction: students enrolled in Neotropical Environment Option (NEO) or permission of the instructor) Long-term research at the Smithsonian Tropical Research Institute will be organized and synthesized to examine historical assembly and ecological maintenance of tropical communities. This synthesis will draw on phylogenetic concepts for historical insight and will examine the probable resilience of these communities to global change, pollution and biodiversity loss.

BIOL 650 RECENT ADVANCES IN BIOLOGY 1. (3) Directed reading, seminar and discussion courses in subjects of current interest in biological research. Intended for students working individually or in classes on selected areas under the supervision of one or more staff members. Content and form are flexible to allow the Department to meet specific student demands or needs. Such courses are arranged by consultation with individual staff.

BIOL 651 RECENT ADVANCES IN BIOLOGY 2. (3) Directed reading, seminar and discussion courses in subjects of current interest in biological research. Intended for students working individually or in classes on selected areas under the supervision of one or more staff members. Content and form are flexible to allow the Department to meet specific student demands or needs. Such courses are arranged by consultation with individual staff.

BIOL 652 RECENT ADVANCES IN BIOLOGY 3. (3) Directed reading, seminar and discussion courses in subjects of current interest in biological research. Intended for students working individually or in classes on selected areas under the supervision of one or more staff members. Content and form are flexible to allow the Department to meet specific student demands or needs. Each course is arranged by consultation with individual staff.

BIOL 655 LABORATORY PROJECTS AND TECHNIQUES 1. (3) Directed training in selected methods used in areas of current interest in biological research. Intended for individuals or classes working in selected areas under the supervision of one or more staff members. Form and content are flexible to allow the Department to meet specific student demands and needs. Each course is arranged by consultation with individual staff.

BIOL 656 LABORATORY PROJECTS AND TECHNIQUES 2. (3) Directed training in selected methods used in areas of current interest in biological research. Intended for individuals or classes working in selected areas under the supervision of one or more staff members. Form and content are flexible to allow the Department to meet specific student demands and needs. Each course is arranged by consultation with individual staff.
BIOL 697 MASTER’S THESIS RESEARCH 1. (13) Independent research work under the direction of the Thesis Supervisor and the Supervisory Committee.

BIOL 698 MASTER’S THESIS RESEARCH 2. (13) Independent research work under the direction of the Thesis Supervisor and the Supervisory Committee.

BIOL 699 MASTER’S THESIS RESEARCH 3. (13) Independent research work under the direction of the Thesis Supervisor and the Supervisory Committee.

BIOL 700 DOCTORAL QUALIFYING EXAMINATION. (0) The oral Qualifying Examination is a formal evaluation of the candidate's ability to proceed to the attainment of the Ph.D. Candidates must submit a thesis proposal in advance of the exam.

BIOL 702 PH.D. SEMINAR. (6) Doctoral candidates are required to give a public oral presentation of their major results before submitting a thesis.

11 Biomedical Engineering

Department of Biomedical Engineering
Duff Medical Building
3775 University Street
Montreal, QC H3A 2B4
Canada
Telephone: 514-398-6736
Fax: 514-398-7461
Website: www.bmed.mcgill.ca
Chair — H.L. Galiana

11.1 Staff

Emeritus Professor
T.M.S. Chang; B.Sc., M.D., C.M., Ph.D.(McG.), F.R.C.P.(C)
F.R.S.(C) (joint appnt. with Physiology)

Professors
J.D. Bobyn; B.Sc., M.Sc.(McG.), Ph.D.(Tor.) (joint appnt. with Surgery)
A.C. Evans; B.Sc.(Liv.), M.Sc.(Sur.), Ph.D.(Leeds) (joint appnt. with Neurology and Neurosurgery)

H.L. Galiana; B.Eng., M.Eng., Ph.D.(McG.)

R.E. Kearney; B.Eng., M.Eng., Ph.D.(McG.)

S. Prakash; B.Sc.(Hon.), M.Sc., M.Tech.(BHU), Ph.D.(McG.)

M. Tabrizian; B.Sc.(Iran), M.Sc., Ph.D.(PMC-France), M.B.A.(HEC) (joint appnt. with Dentistry)

Assistant Professors
C. Grove; B.Sc, M.Sc.(UTC-France), Ph.D.(Univ. Rennes-France) (joint appnt. with Otolaryngology)
F. Barthelat; B.Sc, M.Sc.(UTC-France), Ph.D.(Univ. Rennes-France) (joint appnt. with Biomedical Engineering)

D. Juncker; Dipl., Ph.D.(Neuch-Switzerland) (joint appnt. with Biomedical Engineering)
J.L. Nadeau; B.S., Ph.D.(Univ. MN) (joint appnt. with Biomedical Engineering)

Associate Members
C. Baker (Ophthalmo-surgery), F. Barthelet (Mechanical Engineering), K. Cullen (Chemistry), K. Gotman (Neurology and Neurosurgery), D. Gillot (Neurology), E. Jones (Chemical Engineering), A. Katsarkas (Otolaryngology), A.M. Lauzon (Medicine), T. Milner (Kinesiology & Physical Education), L. Mongeau (Mechanical Engineering), R. Mongrain (Mechanical Engineering), S.N. Nazhat (Mining, Metals and Materials Engineering), B.N. Segal (Otolaryngology), A. Shmuel (Neurology and Neurosurgery), T. Steffen (Surgery)

Adjunct Professors
G. Baroud (Sher.), J.H.T. Bates (Vt.), P.G. Charette (Sher.)

11.2 Programs Offered

The Department offers a graduate training program leading to master's (M.Eng.) and Ph.D. degrees in Biomedical Engineering. It provides instruction and opportunities for interdisciplinary research in the application of engineering, mathematics, and the physical sciences to problems in medicine and the life sciences. Courses are offered for graduate students in the life sciences and in engineering and the physical sciences.

Excellent laboratory facilities for basic and applied research are available in the Department and in the laboratories of associated staff located elsewhere on campus. The Department operates a network of high performance workstations and well-equipped mechanical and electronics workshops.

Basic research in the Department concentrates on the application of quantitative engineering analysis methods to basic biomedical research problems. Currently active areas of research include: neuromuscular and postural control, muscle mechanics, the vestibular system, oculomotor control, the auditory system, joint prosthetics, biomaterials, artificial cells and organs, cell and tissue engineering, drug delivery, prokinesis, functional food and nutraceuticals, medical imaging, microfluidics, nanotechnology and bioinformatics in genomics and proteomics. Staff members are also active in more applied research related to the development of quantitative analysis tools and instruments for biomedical research. Areas of activity include: signal analysis, system identification, modelling, simulation and parameter estimation, image processing, pattern recognition, ultrasound, and biorobotics. A new option in bioinformatics is offered jointly with other University departments.

11.3 Admission Requirements

See Admission Requirements (minimum requirements to be considered for admission), section 5.2 of the General Information section of the Graduate and Postdoctoral Studies Calendar. In addition, please see the department website: www.bmed.mcgill.ca. For current dates of guaranteed consideration, please consult the following website: www.mcgill.ca/gradapplicants/apply.

11.4 Application Procedures

Please address enquiries directly to the Department.

McGill’s online application form for graduate program candidates is available at www.mcgill.ca/gradapplicants/apply.

11.5 Program Requirements

Graduate students may also be registered through departments of Medicine, Science and Engineering, and must then fulfill the requirements for advanced degrees imposed by their respective departments. In addition, all students are required, through course work and independent study, to achieve a degree of inter-disciplinary competence appropriate to their area of specialization.

M.Eng. in Biomedical Engineering (45 credits)

Complementary Courses (21 credits)

12 credits of courses with biomedical content selected from the following:
BMDE 500 (3) Seminars in Biomedical Engineering
BMDE 501 (3) Selected Topics in Biomedical Engineering
BMDE 502 (3) BME Modelling and Identification
BMDE 503 (3) Biomedical Instrumentation
BMDE 504 (3) Biomaterials and Bioperformance
BMDE 505 (3) Cell and Tissue Engineering
BMDE 506 (3) Molecular Biology Techniques
BMDE 508 (3) Introduction to Micro and Nano-Bioengineering
BMDE 519 (3) Biomedical Signals and Systems
BMDE 520 (3) Advanced Medical Imaging
BMDE 521 (3) Orthopaedic Engineering
BMDE 525 (3) Bioinformatics: Proteomics
BIOT 505 (3) Selected Topics in Biotechnology
COMP 526 (3) Probabilistic Reasoning and AI
COMP 558 (3) Fundamentals of Computer Vision
ECSE 526 (3) Artificial Intelligence
ECSE 529 (3) Image Processing and Communication
ECSE 626 (4) Statistical Computer Vision
ECSE 628 (4) Colloquium in Electrical Engineering
EXMD 610 (3) Biomedical Methods in Medical Research
MDPH 607 (3) Introduction to Medical Imaging
MDPH 611 (2) Medical Electronics
MDPH 612 (2) Computers in Medical Imaging
MECH 500 (3) Selected Topics in Mechanical Engineering
MECH 561 (3) Biomechanics of Musculoskeletal Systems
PHGY 517 (3) Artificial Internal Organs
PHGY 518 (3) Artificial Cells

or, with the approval of the student's Graduate Advisory Committee and the Graduate Program Chair, other graduate-level courses with a content of interest to biomedical engineering.

9 credits selected from the courses listed above, or with approval of the Graduate Chair and Supervisor.

In addition, students are required to present their work as a conference paper or departmental seminar before being granted the M.Eng. (Bioinformatics Option) degree.

Thesis Component – Required (24 credits)
BMDE 695 (12) Thesis Submission

12 credits selected from the following courses:
BMDE 690 (3) Thesis Research 1
BMDE 691 (3) Thesis Research 2
BMDE 692 (3) Thesis Research 3
BMDE 693 (6) Thesis Research 4
BMDE 694 (6) Thesis Research 5

M.Eng. in Biomedical Engineering – Bioinformatics Option/Concentration (45 credits)

Required Course (3 credits)
COMP 616 (3) Bioinformatics Seminar

Complementary Courses (18 credits)
12 credits of courses with biomedical content selected from the following:
BMDE 500 (3) Seminars in Biomedical Engineering
BMDE 501 (3) Selected Topics in Biomedical Engineering
BMDE 502 (3) BME Modelling and Identification
BMDE 503 (3) Biomedical Instrumentation
BMDE 504 (3) Biomaterials and Bioperformance
BMDE 505 (3) Cell and Tissue Engineering
BMDE 506 (3) Molecular Biology Techniques
BMDE 508 (3) Introduction to Micro and Nano-Bioengineering
BMDE 651 (3) Orthopaedic Engineering
BMDE 652 (3) Bioinformatics: Proteomics
BIOT 505 (3) Selected Topics in Biotechnology
COMP 526 (3) Probabilistic Reasoning and AI
COMP 558 (3) Fundamentals of Computer Vision
ECSE 526 (3) Artificial Intelligence
ECSE 529 (3) Image Processing and Communication
ECSE 626 (4) Statistical Computer Vision
ECSE 628 (4) Colloquium in Electrical Engineering
EXMD 610 (3) Biomedical Methods in Medical Research
MDPH 607 (3) Introduction to Medical Imaging
MDPH 611 (2) Medical Electronics
MDPH 612 (2) Computers in Medical Imaging
MECH 500 (3) Selected Topics in Mechanical Engineering
MECH 561 (3) Biomechanics of Musculoskeletal Systems
PHGY 517 (3) Artificial Internal Organs
PHGY 518 (3) Artificial Cells

In addition, students are required to present their work as a conference paper or departmental seminar before being granted the M.Eng. (Bioinformatics Option) degree.

Thesis Component – Required (24 credits)
BMDE 693 (6) Thesis Research 4
BMDE 694 (6) Thesis Research 5
BMDE 695 (12) Thesis Submission

Ph.D. in Biomedical Engineering
All students must compete a thesis and the Ph.D. Comprehensive (BMDE 700); any additional course work required will be determined on an individual basis by the student's advisor and Graduate Program Director. In addition, students must successfully pass the following research meetings: 1) Preliminary; 2) Thesis Proposal; 3) Thesis Progress; and 4) Thesis Submission. Details of each meeting can be found at: www.bmed.mcgill.ca/policies_forms.html.

Ph.D. in Biomedical Engineering – Bioinformatics Option/Concentration

Required Courses
COMP 616 (3) Bioinformatics Seminar
BMDE 700 (0) Ph.D. Comprehensive

Any additional course work required will be determined on an individual basis by the student's advisor and Graduate Program Director. In addition, students must successfully pass the following research meetings: 1) Preliminary; 2) Thesis Proposal; 3) Thesis Progress; and 4) Thesis Submission. Details of each meeting can be found at: www.bmed.mcgill.ca/require_phd.html.

Complementary Courses (6 credits)
6 credits from the following courses:
BINF 621 (3) Bioinformatics: Molecular Biology
BMDE 652 (3) Bioinformatics: Proteomics
BTEC 555 (3) Structural Bioinformatics
COMP 618 (3) Bioinformatics: Functional Genomics
PHGY 603 (3) Systems Biology and Biophysics
11.6 Courses

Students preparing to register should consult Class Schedule on the web at www.mcgill.ca/student-records/register/class-schedule for the most up-to-date list of courses available; courses may have been added, rescheduled or cancelled after this Calendar was published. Class Schedule lists courses by term and includes days, times, locations, and names of instructors.

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

BMDE 500D1 (1.5), BMDE 500D2 (1.5) SEMINARS IN BIOMEDICAL ENGINEERING. (Students must register for both BMDE 500D1 and BMDE 500D2.) (No credit will be given for this course unless both BMDE 500D1 and BMDE 500D2 are successfully completed in consecutive terms.)

BMDE 501 SELECTED TOPICS IN BIOMEDICAL ENGINEERING. (3) (3-0-6) An overview of how techniques from engineering and the physical sciences are applied to the study of selected physiological systems and biological signals. Using specific biological examples, systems will be studied using: signal or finite-element analysis, system and identification, modelling and simulation, computer control of experiments and data acquisition.

BMDE 502 BME MODELLING AND IDENTIFICATION. (3) (3-0-6) (Prerequisites: Undergraduate basic statistics and: either BMDE 519, or Signals and Systems (e.g., ECSE 303 & ECSE 304) or equivalent.) Methodologies in systems or distributed multidimensional processes. System themes include parametric vs. non-parametric system representations; linear/non-linear; noise, transients and time variation; mapping from continuous to discrete models; and relevant identification approaches in continuous and discrete time formulations.

BMDE 503 BIOMEDICAL INSTRUMENTATION. (3) (3-0-6) (Prerequisites: Experience with differential equations, in particular Laplace transforms and complex numbers (e.g., MATH 263 or MATH 381 or equivalent) or permission of instructor.) The principles and practice of making biological measurements in the laboratory, including theory of linear systems, data sampling, computer interfaces and electronic circuit design.

BMDE 504 BIOMATERIALS AND BIOPERFORMANCE. (3) (3-0-6) (Restriction: graduate and final-year undergraduate students from physical, biological and medical science, and engineering.) Biological and synthetic biomaterials, medical devices, and the issues related to their bioperformance. The physicochemical characteristics of biomaterials in relation to their biocompatibility and sterilization.

BMDE 505 CELL AND TISSUE ENGINEERING. (3) (3-0-6) (1.5 hours lecture/1.5 hours seminar per week) (Restriction: graduate and final year undergraduate students from physical, biological, and medical science, and engineering.) Application of the principles of engineering, physical, and biological sciences to modify and create cells and tissues for therapeutic applications will be discussed, as well as the industrial perspective and related ethical issues.

BMDE 506 MOLECULAR BIOLOGY TECHNIQUES. (3) (1-5-3) (Prerequisites: MATH 222, BIOL 200 or BIOL 201, CHEM 212 or CHEM 213 or PHYS 253) (Restrictions: Limited to 18 students. Calculus required, physics or physical chemistry (thermodynamics, statistical mechanics) preferred. Primarily for graduate students or advanced undergraduate students in the physical sciences who are interested in learning molecular biology techniques. Preference given to graduate students in Biomedical Engineering and Physics. Students who have completed BIOC 300 or MIMM 366 are not eligible.) Introduction to major techniques of molecular biology for physical scientists.

BMDE 508 INTRODUCTION TO MICRO AND NANO-BIOENGINEERING. (3) (3-0-6) (This course is intended for graduate and advanced undergraduate students having a biological/medical background or an engineering, physical sciences background. Engineering students enrolled in the Minor in Biomedical Engineering, or Honours in Electrical Engineering and Honours in Mechanical Engineering, should be particularly interested.) (Prerequisite: Permission of instructor) The micro and nanotechnologies that drive and support the miniaturization and parallelization of techniques for life sciences research, including different inventions, designs and engineering approaches that lead to new tools and methods for the life sciences - while transforming them - and help advance our knowledge of life.

BMDE 519 BIOMEDICAL SIGNALS AND SYSTEMS. (3) (3-0-6) (Prerequisites: Satisfactory standing in U3 Honours Physiology; or U3 Major in Physics-Physiology; or U3 Major Physiology-Mathematics; or permission of instructor.) An introduction to the theoretical framework, experimental techniques and analysis procedures available for the quantitative analysis of physiological systems and signals. Lectures plus laboratory work using the Biomedical Engineering computer system. Topics include: amplitude and frequency structure of signals, filtering, sampling, correlation functions, time and frequency-domain descriptions of systems.

BMDE 650 ADVANCED MEDICAL IMAGING. (3) (Prerequisite: MDPH 607) Review of advanced techniques in medical imaging including: fast magnetic resonance imaging (MRI), functional MRI, MR angiography and quantitative flow measurement, spiral and dynamic x-ray computed tomography, 2D/3D positron emission tomography (PET), basic PET physiology, tracer kinetics, surgical planning and guidance, functional and anatomical brain mapping, 2D and 3D ultrasound imaging, and medical image processing.

BMDE 651 ORTHOPAEDIC ENGINEERING. (3) (Restriction: Permission of the instructor.) Science and technology related to implants used for various orthopaedic reconstructive procedures, with emphasis on artificial hip and knee joint prostheses.

BMDE 652 BIOINFORMATICS: PROTEOMICS. (3) (Prerequisite: Enrolment in Bioinformatics option program or permission by coordinators.) (Note: The course is inter-disciplinary and is targeted to students with different scientific backgrounds. A substantial portion of marks will be based on practical assignments.) Overview of high-throughput proteomic technologies commonly employed to study the localization and function of all proteins in an organism, and the bioinformatic approaches to analyze raw data and deposit them in proteome databases.

BMDE 690 THESIS RESEARCH 1. (3)
BMDE 691 THESIS RESEARCH 2. (3)
BMDE 692 THESIS RESEARCH 3. (3)
BMDE 694 THESIS RESEARCH 5. (6)
BMDE 695 THESIS SUBMISSION. (12)

BMDE 700 PH.D. COMPREHENSIVE. (0)
12.4 Application Procedures

Applicants for graduate studies through academic units in the Faculty of Agricultural and Environmental Sciences must forward supporting documents to:

Department of Bioresource Engineering
Macdonald Campus of McGill University
21,111 Lakeshore
Sainte-Anne-de-Bellevue, QC H9X 3V9
Canada

Telephone: 514-398-7774
Fax: 514-398-8387
Email: susan.gregus@mcgill.ca

Applications will be considered upon receipt of a completed application form, $100 application fee, and the following supporting documents:

Transcripts – Two official copies of all university-level transcripts with proof of degree(s) granted. Transcripts written in a language other than English or French must be accompanied by a certified translation. An explanation of the grading system used by the applicant’s university is essential. It is the applicant’s responsibility to arrange for transcripts to be sent.

It is desirable to submit a list of the titles of courses taken in the major subject, since transcripts often give code numbers only. Applicants must be graduates of a university of recognized reputation and hold a bachelor’s degree equivalent to a McGill Honours degree in a subject closely related to the one selected for graduate work. This implies that about one-third of all undergraduate courses should have been devoted to the subject itself and another third to cognate subjects.

Letters of Recommendation – Two letters of recommendation on letterhead (official paper) of originating institution or bearing the university seal and with original signatures from two instructors familiar with the applicant’s work, preferably in the applicant’s area of specialization. It is the applicant’s responsibility to arrange for these letters to be sent.

Competency in English – 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 appropriate exams, e.g., TOEFL (minimum score 550 on the paper-based test, 213 on the computer-based test, or 86 on the internet-based test with each component score not less than 20) or IELTS (minimum overall band 6.5). The MCHE is not considered equivalent. Results must be submitted as part of the application. The University code is 0935 (McGill University, Montreal); please use department code 31 (graduate schools), Biological Sciences - Agriculture to ensure that your TOEFL reaches this Office without delay.

Graduate Record Exam (GRE) – The GRE is not required, but it is highly recommended.

DOCUMENTS SUBMITTED WILL NOT BE RETURNED.

Application Fee (non-refundable) – A fee of $100 Canadian must accompany each application (including McGill students), otherwise it cannot be considered. This sum must be remitted using one of the following methods:

- Credit card (by completing the appropriate section of the application form). N.B.: online applications must be paid for by credit card.
- Certified cheque in CAD$ drawn on a Canadian bank.
- Certified cheque in USD$ drawn on a U.S. bank.
- Canadian Money order in CAD$.
- U.S. Money Order in USD$.
- An international draft in Canadian funds drawn on a Canadian bank requested from the applicant’s bank in his/her own country.
Dates for Guaranteed Consideration
For dates for guaranteed consideration, please consult the following website: www.mcgill.ca/gradapplicants/programs. Then select the appropriate program. It may be necessary to delay review of the applicant’s file until the following admittance period if application materials including supporting documents are received after the dates for guaranteed consideration. International applicants are advised to apply well in advance of these dates because immigration procedures may be lengthy. Applicants are encouraged to make use of the online application form available on the web at www.mcgill.ca/gradapplicants/apply.

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

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

Qualifying Students – Some applicants whose academic degrees and standing entitle them to serious consideration for admission to graduate studies, but who are considered inadequately prepared in the subject selected may be admitted to a Qualifying Program if they have met the Graduate and Postdoctoral Studies minimum CGPA of 3.0/4.0. The course(s) to be taken in a Qualifying Program will be prescribed by the academic unit concerned. Qualifying students are registered in graduate studies, but not as candidates for a degree. Only one qualifying year is permitted. Successful completion of a qualifying program does not guarantee admission to a degree program.

12.5 Program Requirements

M.Sc. (Bioreource Engineering)
At least 12 months of full-time study are required for this degree.

M.Sc. in Bioreource Engineering (Thesis) (46 credits)
This option for the M.Sc. degree is oriented towards individuals who intend to develop a career in bioresource engineering research.

Required Courses (5 credits)
BREE 651 (1) Departmental Seminar M.Sc. 1
BREE 652 (1) Departmental Seminar M.Sc. 2
BREE 699 (3) Scientific Publication

Complementary Courses (9 credits)
9 credits of graduate-level course work in bioresource engineering and other fields to be determined in consultation with the research director.

Thesis Component – Required (32 credits)
BREE 691 (4) M.Sc. Thesis 1
BREE 692 (4) M.Sc. Thesis 2
BREE 693 (4) M.Sc. Thesis 3
BREE 694 (4) M.Sc. Thesis 4
BREE 695 (4) M.Sc. Thesis 5
BREE 696 (4) M.Sc. Thesis 6
BREE 697 (4) M.Sc. Thesis 7
BREE 698 (4) M.Sc. Thesis 8

M.Sc. in Bioreource Engineering (Thesis) – Environment Option (46 credits)

Required Courses (11 credits)
BREE 651 (1) Departmental Seminar M.Sc. 1
BREE 652 (1) Departmental Seminar M.Sc. 2
BREE 699 (3) Scientific Publication
ENVR 610 (3) Foundations of Environmental Policy
ENVR 650 (1) Environmental Seminar 1
ENVR 651 (1) Environmental Seminar 2
ENVR 652 (1) Environmental Seminar 3

Complementary Courses (3 credits)
3 credits chosen from:
ENVR 519 (3) Global Environmental Politics
ENVR 544 (3) Environmental Measurement and Modelling
ENVR 580 (3) Topics in Environment 3
ENVR 611 (3) The Economy of Nature
ENVR 620 (3) Environment and Health of Species
ENVR 622 (3) Sustainable Landscapes
ENVR 630 (3) Civilization and Environment 1
ENVR 680 (3) Topics in Environment 4

or another graduate course at the 500 level or higher recommended by the advisory committee and approved by the Environment Option Committee.

Thesis Component – Required (32 credits)
BREE 691 (4) M.Sc. Thesis 1
BREE 692 (4) M.Sc. Thesis 2
BREE 693 (4) M.Sc. Thesis 3
BREE 694 (4) M.Sc. Thesis 4
BREE 695 (4) M.Sc. Thesis 5
BREE 696 (4) M.Sc. Thesis 6
BREE 697 (4) M.Sc. Thesis 7
BREE 698 (4) M.Sc. Thesis 8

M.Sc. in Bioreource Engineering (Thesis) – Neotropical Environment Option (46 credits)
Participation in the MSE-Panama Symposium presentation in Montreal is required.

Required Courses (11 credits)
BIOL 640 (3) Tropical Biology and Conservation
BREE 651 (1) Departmental Seminar M.Sc. 1
BREE 652 (1) Departmental Seminar M.Sc. 2
BREE 699 (3) Scientific Publication
ENVR 610 (3) Foundations of Environmental Policy

Complementary Courses (3 credits)
3 credits chosen from:
AGRI 550 (3) Sustained Tropical Agriculture
BIOL 553 (3) Neotropical Environments
BIOL 641 (3) Issues in Tropical Biology
ENVR 611 (3) The Economy of Nature
ENVR 612 (3) Tropical Environmental Issues
ENVR 680 (3) Topics in Environment 4
POLI 644 (3) Tropical Environmental Politics
SOCI 565 (3) Social Change in Panama

Thesis Component - Required (32 credits)
BREE 691 (4) M.Sc. Thesis 1
BREE 692 (4) M.Sc. Thesis 2
BREE 693 (4) M.Sc. Thesis 3
BREE 694 (4) M.Sc. Thesis 4
BREE 695 (4) M.Sc. Thesis 5
BREE 696 (4) M.Sc. Thesis 6
BREE 697 (4) M.Sc. Thesis 7
BREE 698 (4) M.Sc. Thesis 8

M.Sc. in Bioreource Engineering (Non-Thesis) – Integrated Water Resources Management Option (47 credits)

Required Courses (38 credits)
AEMA 614 (3) Temporal & Spatial Statistics 1
BREE 510 (3) Watershed Systems Engineering
BREE 533 (3) Departmental Seminar M.Sc. 2
BREE 623 (3) Proposal Preparation
BREE 630 (15) IWRM Internship
BREE 651 (1) Departmental Seminar M.Sc. 1
BREE 652 (1) Departmental Seminar M.Sc. 2
BREE 655 (3) IWRM Research Visits
NRSC 514 (3) Freshwater Ecosystems
PARA 515 (3) Water, Health and Sanitation
**M.Sc. Applied in Bioresource Engineering (Non-Thesis) –
Neotropical Environment Option (45 credits)**

Participation in the MSE-Panama Symposium presentation in Montreal is required.

**Required Courses (8 credits)**
- BIOL 640 (3) Tropical Biology and Conservation
- BREE 651 (1) Departmental Seminar M.Sc. 1
- BREE 652 (1) Departmental Seminar M.Sc. 2
- ENVR 610 (3) Foundations of Environmental Policy

**Complementary Courses (25 credits)**
- 3 credits, one of the following courses:
  - AGRI 550 (3) Sustained Tropical Agriculture
  - BIOL 553 (3) Neotropical Environments
  - BIOL 641 (3) Issues in Tropical Biology
  - ENVR 611 (3) The Economy of Nature
  - ENVR 612 (3) Tropical Environmental Issues
  - ENVR 680 (3) Topics in Environment 4
  - POLI 644 (3) Tropical Environmental Politics
  - SOCI 565 (3) Social Change in Panama

22 additional credits of 500 level or higher courses chosen in consultation with the academic advisor.

**Project (12 credits)**
- BREE 671 (6) Project 1
- BREE 672 (6) Project 2

**M.Sc. Applied in Bioresource Engineering (Non-Thesis) –
Environmental Engineering Option (45 credits)**

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 through a wide range of technical and non-technical courses offered by collaborating departments and faculties at the University.

**Required Core Courses (9 credits)**
- BREE 533 (3) Water Quality Management
- CIVE 615 (3) Environmental Engineering Seminar
- CHEE 591 (3) Environmental Bioremediation

**Complementary Courses (minimum 19 credits)**

Data analysis course: 3 credits from the following:
- AEMA 611 (3) Experimental Designs
- CIVE 555 (3) Environmental Data Analysis
- PSYC 650 (3) Advanced Statistics 1

Toxicology course: 3 credits from the following:
- OCCH 612 (3) Principles of Toxicology
- OCCH 616 (3) Occupational Hygiene

Water pollution engineering course: 4 credits from the following:
- 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: 3 credits from the following:
- CHEE 592 (3) Industrial Air Pollution Control
- MECH 534 (3) Air Pollution Engineering
- or an approved graduate-level alternative.

Environmental impact course: 3 credits from the following:
- GEOG 501 (3) Modelling Environmental Systems
- GEOG 551 (3) Environmental Decisions
- or an approved graduate-level alternative.

Environmental policy course: 3 credits from the following:
- URBP 506 (3) Environmental Policy and Planning
- or an approved graduate-level alternative.
Further complementary courses (balance of course work to meet the 45-credit program requirement):
Remaining engineering or non-engineering courses from an approved list of courses, at the 500 level or higher, from the Faculty of Engineering, Faculty of Agricultural and Environmental Sciences, and Departments of Atmospheric and Oceanic Sciences, Biology, Chemistry, Earth and Planetary Sciences, Economics, Epidemiology and Biostatistics, Geography, Law, Management, Occupational Health, Political Science, Religious Studies, Sociology, and the McGill School of Environment.

The following project course may also be taken as part of this requirement:
BREE 671 (6) Project 1

Required Project (6 credits)
BREE 672 (6) Project 2

Ph.D. in Bioresource Engineering
Candidates for the Ph.D. degree will normally register for the M.Sc. degree first. In cases where the research work is proceeding very satisfactorily, or where the equivalent of the M.Sc. degree has been completed previously, candidates may be permitted to proceed directly to the Ph.D. degree.

Required Courses (0 credits)
BREE 701 (0) Ph.D. Comprehensive Examination
taken either late in the first, or early in the second, registration year to qualify to proceed to the completion of the Ph.D. degree.
BREE 751 (0) Departmental Seminar Ph.D. 1
BREE 752 (0) Departmental Seminar Ph.D. 2
BREE 753 (0) Departmental Seminar Ph.D. 3
BREE 754 (0) Departmental Seminar Ph.D. 4

Complementary Courses
Courses of study selected for a Ph.D. program will depend on the existing academic qualifications of the candidate, and on those needed for effective pursuit of research in the chosen field. Candidates are encouraged to take an additional course of study of their own choice in some field of the humanities, sciences or engineering not directly related to their research. The program will be established by consultation of the candidate with a committee that will include the Research Director and at least one other professor.

Thesis
Satisfactory completion of a Ph.D. thesis.

Ph.D. in Bioresource Engineering – Environment Option

Required Courses (6 credits)
BREE 701 (0) Ph.D. Comprehensive Examination
taken either late in the first, or early in the second, registration year to qualify to proceed to the completion of the Ph.D. degree.
BREE 751 (0) Departmental Seminar Ph.D. 1
BREE 752 (0) Departmental Seminar Ph.D. 2
BREE 753 (0) Departmental Seminar Ph.D. 3
BREE 754 (0) Departmental Seminar Ph.D. 4

Complementary Courses
One course chosen from:
ENVR 519 (3) Global Environmental Politics
ENVR 544 (3) Environmental Measurement and Modelling
ENVR 560 (3) Topics in Environment 3
ENVR 611 (3) The Economy of Nature
ENVR 620 (3) Environment and Health of Species
ENVR 622 (3) Sustainable Landscapes
ENVR 630 (3) Civilization and Environment 1
ENVR 680 (3) Topics in Environment 4

or another graduate course at the 500 level or higher recommended by the advisory committee and approved by the Environment Option Committee.

Thesis
Satisfactory completion of a Ph.D. thesis.

Ph.D. in Bioresource Engineering – Neotropical Environment Option
Participation in the MSE-Panama Symposium presentation in Montreal is required.

Required Courses (6 credits)
BIOL 640 (3) Tropical Biology and Conservation
BREE 701 (0) Ph.D. Comprehensive Examination
taken either late in the first, or early in the second, registration year to qualify to proceed to the completion of the Ph.D. degree.
BREE 751 (0) Departmental Seminar Ph.D. 1
BREE 752 (0) Departmental Seminar Ph.D. 2
BREE 753 (0) Departmental Seminar Ph.D. 3
BREE 754 (0) Departmental Seminar Ph.D. 4
ENVR 610 (3) Foundations of Environmental Policy

Complementary Courses
3 credits, one of the following courses:
AGRI 550 (3) Sustained Tropical Agriculture
BIOL 553 (3) Neotropical Environments
BIOL 641 (3) Issues in Tropical Biology
ENVR 611 (3) The Economy of Nature
ENVR 612 (3) Tropical Environmental Issues
ENVR 680 (3) Topics in Environment 4
POLI 644 (3) Tropical Environmental Politics
SOCI 565 (3) Social Change in Panama

Thesis
Satisfactory completion of a Ph.D. thesis.

Graduate Certificate in Bioresource Engineering – Integrated Water Resources Management (15 credits)

Required Courses (9 credits)
NRSC 512 (3) Water: Ethics, Law and Policy
NRSC 514 (3) Fresh Water Ecosystems
PARA 515 (3) Water, Health and Sanitation

Complementary Courses (6 credits)
3 credits from the following:
BREE 533 (3) Water Quality Management
CIVE 550 (3) Water Resources Management

and 3 credits from the list available in the Department chosen in consultation with the academic advisor.

12.6 Courses
Students preparing to register should consult Class Schedule on the web at www.mcgill.ca/student-records/register/class-schedule for the most up-to-date list of courses available; courses may have been added, rescheduled or cancelled after this Calendar was published. Class Schedule lists courses by term and includes days, times, locations, and names of instructors.

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

BREE 501 SIMULATION AND MODELLING. (3) (Restrictions: U3 students and above. Not open to students who have taken ABEN 612 or ABEN 501.) Modelling, physical and virtual models of linear, chaotic and stochastic systems, simulation techniques and methods for static and dynamic models, steady and unsteady state. Examples from various areas such as machine design, population dynamics, food processing, biological control, farm management, ecological system design. Mathematics and computer oriented - students must be familiar with microcomputer operation.
BREE 502 DRAINAGE/IRRIGATION ENGINEERING. (3) (Prerequisite: BREE 217 (formerly ABEN 217)) (Restrictions: U3 students and above. Not open to students who have taken ABEN 611 or ABEN 502.) Benefits and importance of drainage; types of drainage systems; design and construction of main, surface and subsurface drainage systems; drainage materials. Crop water requirements; evapotranspiration models; design and layout of surface, sprinkler and drip irrigation systems; pipe hydraulics; pumps.

BREE 504 INSTRUMENTATION AND CONTROL. (3) (3 lectures and one 2-hour lab) (Prerequisite and one 2-hour lab) (Prerequisite: BREE 212 (formerly ABEN 312) or ECSE 281) (Restriction: Not open to students who have taken ABEN 504.) Principles and operation of instrument systems used for measurement and control in agricultural processes and research.

BREE 506 ADVANCES IN DRAINAGE MANAGEMENT. (3) (3 hours intensive course) (Restriction: Not open to students who have taken ABEN 506.) Land drainage in relation to soils and crops. Design of regional drainage systems, stability of ditches, ice problems. Design of subsurface drainage systems. Theories of flow into drain pipes. Hydraulics of wells. Drainage of irrigated lands. Water table control.

BREE 509 HYDROLOGIC SYSTEMS AND MODELLING. (3) (3 hour lectures) (Restriction: Not open to students who have taken ABEN 509.) Use of deterministic and stochastic models to analyze components of the hydrologic cycle on agricultural and forested watersheds, floods frequency analysis, hydrograph analysis, infiltration, runoff, overland flow, flood routing, erosion and sediment transport. Effects of land-use changes and farm and recreational water management systems on the hydrologic regime.

BREE 510 WATERSHED SYSTEMS ENGINEERING. (3) (3-1-5) (Restrictions: U3 students or above.) (Note: Case studies and a project.) An examination and application of methodologies, tools and algorithms used in environmental systems engineering with an emphasis on allocation of resources within a watershed. Skills addressed include systematic evaluation of alternatives, identification of tradeoffs and assessment of the degree of optimality of design or alternatives.

BREE 512 SOIL CUTTING AND TILLAGE. (3) (2 lectures and one 2-hour lab) (Prerequisite: Undergraduate) BREE 341 (formerly ABEN 341) (Restriction: Not open to students who have taken ABEN 512.) Soil mechanics applied to cutting, tillage and drainage installation tools. Soil cutting forces for two and three dimensional implementations. Soil loosening, inversion, sorting and manipulation. Selection of traction machines to match soil cutting and tillage requirements. Depth and grade control systems. Analysis of drainage machine, wheel trenchers, chain trenchers and trenchless plows.

BREE 515 SOIL HYDROLOGIC MODELLING. (3) (3 lectures and one 3-hour lab) (Restriction: Not open to students who have taken ABEN 515.) A review of computer simulation models for designing subsurface drainage systems. Use of CAD systems for designing and drafting drainage plans.

BREE 518 BIO-TREATMENT OF WASTES. (3) (1 hour lecture) (Restriction: Not open to students who have taken ABEN 518.) Special topics concerning control of pollution agents from the agricultural, food industry; odor control, agricultural waste treatment including biological digestion, flocculants, land disposal and sedimentation, pesticide transport.

BREE 519 ADVANCED FOOD ENGINEERING. (3) (3 lectures and one 2-hour lab) (Prerequisites: BREE 325 (formerly ABEN 325) and MECH 426, or permission of instructor) (Restriction: Not open to students who have taken ABEN 519.) Advanced topics in food engineering. Concepts of mathematical modelling and research methodologies in food engineering. Topics include heat and mass transfer in food systems, packaging and distribution of food products, thermal and non-thermal processing, rheology and kinetics of food transformations.

BREE 525 CLIMATE CONTROL FOR BUILDINGS. (3) (3 lectures and one 3-hour lab) (Prerequisite: BREE 301 (formerly ABEN 301)) (Restriction: U3 students or above. Not open to students who have taken ABEN 525.) The analyses of heat and water vapour transfer through the structure of buildings are used to design heating, ventilation and refrigeration systems. Heat conduction and convection as well as radiation are included in the analysis of heat transfer. Ventilation systems are designed for livestock shelters, produce storages and greenhouses.

BREE 530 FERMENTATION ENGINEERING. (3) (3 lectures and one 3-hour lab) (Prerequisite: Undergraduate) BREE 325 (formerly ABEN 325) or equivalent) (Graduate courses available to senior undergraduates with permission of the instructor) (Restriction: Not open to students who have taken ABEN 530.) Advanced topics in food and fermentation engineering are covered, including brewing, bioreactor design and control and microbial kinetics.

BREE 531 POST-HARVEST DRYING. (3) (Restrictions: U3 students or above. Not open to students who have taken ABEN 621 or ABEN 531.) Heat and moisture transfer with respect to drying of agricultural commodities; techniques of enhancement of heat and mass transfer; drying efficiency and scale-up problems.

BREE 532 POST-HARVEST STORAGE. (3) (Restrictions: Not open to students who have taken ABEN 622 or ABEN 532.) Active, semi-passive and passive storage systems; environmental control systems; post-harvest physiology and pathogenicity; quality assessment and control methodology; economic aspects of long-term storage.

BREE 533 WATER QUALITY MANAGEMENT. (3) (Restriction: Not open to students who have taken BREE 625 (formerly ABEN 625.) Management of water quality for sustainability. Cause of soil degradation, surface and groundwater contamination by agricultural chemicals and toxic pollutants. Screening and mechanistic models. Human health and safety concerns. Water table management. Soil and water conservation techniques will be examined with an emphasis on methods of prediction and best management practices.

BREE 603 ADVANCED PROPERTIES: FOOD AND PLANT MATERIALS. (3) (Prerequisite: Permission of instructor) Advanced topics related the physico-chemical characteristics/properties of biological products: including mechanical, thermal, electromagnetic and functional properties. Emphasis will be on food constituents (nutraceuticals), plants of pharma-co-interest (phytochemicals), new sources of natural fibers and biofuel biomass.

BREE 607 ENGINEERING ASPECTS OF PLANT ENVIRONMENT. (3) (3 lectures) (Restriction: Not open to students who have taken ABEN 607.) Advances in soil-water-plant dynamics, topsoil and subsoil compaction, measurement techniques, methods of alleviating compaction, economic analysis.

BREE 608 SPECIAL PROBLEMS IN BIORESOURCE ENGINEERING 1. (3) (2 conferences, either term) (Restriction: Not open to students who have taken ABEN 608.) Laboratory, field and library studies and reports on special problems related to agricultural and bio-systems engineering that are not covered in regular course work.

BREE 616 ADVANCED SOIL AND WATER ENGINEERING. (3) (3 lectures) (Restriction: Not open to students who have taken ABEN 616.) Derivation of the governing partial differential equations for both steady and unsteady 3-D flow of groundwater through variably saturated, heterogeneous, anisotropic deformable media, finite difference techniques, numerical method of lines, computer programs, stochastic methods in soil and water engineering.

BREE 623 PROPOSAL PREPARATION. (3) (3 hours conferences) (Restriction: Open only to Non-thesis graduate students in the department of Bioresource Engineering.) Critiques of proposals prepared by others. Preparation and defense of a research proposal.

BREE 651 DEPARTMENTAL SEMINAR M.SC. 1. (1) (Restriction: Not open to students who have taken ABEN 651.) To give seminars and participate in discussions.

BREE 652 DEPARTMENTAL SEMINAR M.SC. 2. (1) (Restriction: Not open to students who have taken ABEN 652.) To give seminars and participate in discussions.
13 Chemical Engineering

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Chair — D. Berk

13.1 Staff

Professors
D.G. Cooper; B.Sc., Ph.D.(Tor.)
A.D. Rey; B.Ch.E.(CN), Ph.D.(Calif.) (James McGill Professor)

Associate Professors
D. Berk; B.Sc.(Bosphorus), M.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'sell) (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. & Mgmt.(McM.), Ph.D.(Minn.), P.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)

Assistant Professors
E. Jones; B.A.Sc.(Wat.), M.S., Ph.D.(Cal. Tech.) Jr. Eng. (CRC-Tier II)
(CRC-Tier II)
V. Yargeau; B.Ch.E., M.Sc.A., Ph.D.(Sher.), Eng.

Emeritus Professors
J.M. Dealy; B.S.(Kansas), M.S.E., Ph.D.(Mich.), Eng.
M.R. Kamai; B.S.(III.), 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.

Paprican Adjunct Professor
G.J. Kubes; B.Sc., B.Sc.(Praque), Ph.D.(Bralislava), P.Eng.

Adjunct Professors

13.2 Programs Offered

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

Two options are available for the M.Eng. degree: the thesis option and the project option. The M.Eng. (Thesis) is a research-oriented degree requiring a limited number of courses and a research thesis; the M.Eng. (Project) is a course-oriented degree which includes a project. A specialized version of the M.Eng. (Project) is also offered: M.Eng. (Project - Environmental Engineering).

The Ph.D. is a research degree requiring a thesis which makes a distinct contribution to knowledge.

The Department’s offices and research laboratories are located in the M.H. Wong Building, which was completed in 1996. Members of the Department are active in a number of research areas, including transport phenomena, separation processes, thermodynamics, chemical reaction engineering and catalysis, colloidal phenomena, experimental and computational materials science.
Electrochemistry, nanotechnology, plasma technology, advanced materials synthesis, polymer science and engineering, biochemical engineering, biotechnology, biomedical engineering, biomechanics, nanotechnology, sustainable energy development, gas hydrate systems, and environmental engineering. Most professors are members of one or more research groups.

Biotechnology research in the department includes the development of new processes/products, the environmental impact of biotransformation, the biodegradation of pharmaceuticals and biomedical applications. Strong collaborations in these research areas exist with other engineering departments, the Faculty of Medicine and the Montreal Heart Institute. Research in biomedicoengineering also includes development and characterization of devices and biomaterials for human implants and biosensors, and the study of biofilm formation on biomaterials.

Research in Plasma Technology includes fundamental studies in transport phenomena, reaction kinetics, optical emission and laser-absorption spectroscopy, and reactor design, as well as applied studies in plasma processing for environmental and biomedical engineering applications, advanced materials synthesis, and coating generation. Close collaboration is maintained with other Quebec universities through Plasma-Québec, a FQRNT Regroupement Stratégique.

Research related to the Environment is pursued on many fronts; for example, the plasma treatment of lithium batteries for recycling, the biodegradation of pesticides, and a number of projects concerning the fate of plasticizers, chlorinated hydrocarbons and polymers in the environment. Other projects involve electrochemical treatment of wastewater, the transport and fate of microbial pathogens and other contaminants in the environment, the development of environmentally-friendly corrosion inhibitors, degradation of pharmaceuticals in wastewater, etc.

Research in Computational Materials Science is a science-based program that seeks to design and control materials, products, and processes using molecular, mesoscopic, and macroscopic computational modeling. This work is in close collaboration with the National Science Foundation Center for Advanced Engineering Fibers and Films at Clemson University. The research in Computational Biomaterials Science seeks to understand the fundamental natural principles that lead to advanced materials such as super strong spider silk fibers, natural foams, and biolubricants.

Research in colloids and interface science brings together a variety of theoretical, computational and experimental "tools". Current efforts are focused on the development of a novel optical-tweezer/micro-electrophoresis apparatus for probing the dynamics of "fuzzy" colloidal particles, and development of experiments and theory for studying the organization and dynamics of synthetic polymers grafted to lipid-bilayer membranes. The broader objectives are to understand in detail how macromolecules forming "soft" interfaces influence colloidal dynamics and equilibria.

### 13.3 Admissions Requirements

Admission to graduate study 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 study whose mother tongue is not English and who have not completed an undergraduate degree at 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 or 233 on the computer-based test) or present proof of appropriate English courses until his/her research supervisor is satisfied with the student's level of English.

Graduate and Postdoctoral Studies Office.

The application procedure is outlined on the web at [www.mcgill.ca/gradapplicants/programs](http://www.mcgill.ca/gradapplicants/programs). Then select the appropriate program.

For dates for guaranteed consideration, please consult the following website: [www.mcgill.ca/gradapplicants/programs](http://www.mcgill.ca/gradapplicants/programs). Then select the appropriate program. Dates for guaranteed consideration differ for International and Canadian (and Permanent Resident) students, to allow time to obtain a visa.

### 13.5 Program Requirements

#### M.Eng.

The master's degrees require the completion of 45 credits and three terms of residence at McGill.

#### M.Eng. (Thesis)

Thesis: A thesis examined according to the procedures of the Graduate and Postdoctoral Studies Office.

Proficiency in English: A student not fluent in English must take appropriate English courses until his/her research supervisor is satisfied with the student's level of English.

Seminar: Presentation of one seminar to the Department.

Coursework: Completion of the courses listed below

**Required Courses (33 credits)**

- CHERE 681 (1) Laboratory Safety 1
- CHERE 682 (1) Laboratory Safety 2
- CHERE 697 (6) Thesis Proposal
- CHERE 698 (12) Thesis Research 1
- CHERE 699 (13) Thesis Research 2

**Complementary Courses (12 credits)**

- 3-4 credits of chemical engineering courses at the 500-level or higher.
- 4 credits from:
  - CHERE 611 (4) Heat and Mass Transfer
  - CHERE 621 (4) Thermodynamics
  - CHERE 631 (4) Foundations of Fluid Mechanics
  - CHERE 641 (4) Chemical Reaction Engineering
  - CHERE 662 (4) Computational Methods
  - CHERE 672 (4) Process Dynamics and Control

4-5 credits of chemical engineering or other engineering courses at the 500-level or higher.

#### M.Eng. (Non-Thesis or Project)

Courses: 33-39 credits (a minimum of 18 credits in Chemical Engineering).

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

The M.Eng. (Project) follows the above distribution between courses and project.
The requirements for the specialization in Environmental Engineering are provided below.

**M.Eng. in Chemical Engineering (Non-Thesis) Environmental Engineering (45 credits)**

**Required Core Courses (6 credits)**
- CHEE 615 (3) Environmental Engineering Seminar
- CHEE 591 (3) Environmental Bioremediation

**Complementary Courses (minimum 22 credits)**

**Data analysis course:**
- AEMA 611 or (3) Experimental Designs
- CIVE 555 or (3) Environmental Data Analysis
- PSYC 650 (3) Advanced Statistics 1

**Toxicology:**
- OCCH 612 or (3) Principles of Toxicology
- OCCH 616 (3) Occupational Hygiene

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

**Air pollution engineering:**
- CHEE 592 or (3) Industrial Air Pollution Control
- MECH 534 (3) Air Pollution Engineering

**Soil and water quality management:**
- BREE 533 (3) Water Quality Management
- CIVE 686 (4) Site Remediation

**Environmental impact course:**
- GEOG 501 (3) Modelling Environmental Systems
- GEOG 551 (3) Environmental Decisions

**Environmental policy course:**
- URBP 506 (3) Environmental Policy and Planning

**Elective courses (minimum 11 credits)**

Another project course and/or engineering or non-engineering graduate courses subject to approval.

The relevant Project course in Chemical Engineering is:
- CHEE 696 (6) Extended Project

**Required Project Course (6 credits)**
- CHEE 695 (6) Project in Chemical Engineering

**Ph.D.**

The Ph.D. requires three years of residence at McGill. Thesis: A thesis examined according to procedures of Graduate and Postdoctoral Studies.

Proficiency in English: A student not fluent in English must take appropriate English courses until his/her research supervisor is satisfied with the student’s level of English.

Seminars: Presentation of two seminars to the Department; the first as required by CHEE 797 (see Research Courses below), the second nearing the completion of the thesis.

Coursework: Completion of the courses listed below.

**Required Courses (2 credits)**
- 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-level or higher.

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 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 coursework requirements for the Ph.D.

**13.6 Courses**

Students preparing to register should consult Class Schedule on the web at www.mcgill.ca/student-records/register/class-schedule for the most up-to-date list of courses available; courses may have been added, rescheduled or cancelled after this Calendar was published. Class Schedule lists courses by term and includes days, times, locations, and names of instructors.

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

Denotes limited enrolment

- **CHEE 541 Electrochemical Engineering.** (3) (3-0-6) (Prerequisite: CHEE 310 or permission of instructor.) (Restriction: Not open to students who have taken CHEE 489.) Electrochemical systems: electrodes, reactors; electrochemical stoichiometry, thermodynamics and kinetics; mass and charge transport; current and potential distribution in an electrochemical reactor; electrocatalysis; fuel cells technology; batteries; industrial electrochemical processes; electrochemical sensors; biomedical electrochemistry; passivity, corrosion and corrosion prevention; electrocrytallization; experimental Methods.

- **CHEE 543 Plasma Engineering.** (3) (3-1-5) (Prerequisites: CHEE 220 and CHEE 314 or equivalent.) Description of the plasma state and parameters, plasma generation methods, and of the related process control and instrumentation. Electrical breakdown in gases and a series of discharge models are covered. Plasma processing applications such as PVD, PECVD, plasma polymerisation and etching, environmental applications, nanoparticle synthesis, spraying and sterilization are treated.

- **CHEE 563 Biofluids and Cardiovascular Mechanics.** (3) (3-0-6) (Prerequisites: CHEE 314 or MECH 331 or permission of instructor.) (Restriction: Not open to students who have taken MECH 563.) Basic principles of circulation including vascular fluid and solid mechanics, modelling techniques, clinical and experimental methods and the design of cardiovascular devices.

- **CHEE 571 Small Computer Applications: Chemical Engineering.** (3) (3-0-6) (Prerequisite: CHEE 458 or permission of the instructor.) The use of small computers employing a high level language for data acquisition and the control of chemical processes. Real-time system characteristics and requirements, analog to digital, digital to analog conversions and computer control loops are examined. Block level simulation.

- **CHEE 582 Polymer Science & Engineering.** (3) (3-0-6) (Prerequisite: CHEE 458 or permission of the instructor.) Application of engineering fundamentals to the preparation and processing of polymers emphasizing the relationship between polymer structure and properties. Topics include: polymer synthesis techniques, characterization of molecular weight, crystallinity, glass transition, phase behaviour, mechanical properties, visco-elasticity, rheology, and polymer processing for use in blends and composite materials.

- **CHEE 584 Polymer Processing.** (3) (3-0-6) (Corequisite: CHEE 215 or MIME 356 or equivalent.) (Restriction: Not open to students who have taken CHEE 684.) Survey of polymer processing operations with emphasis on the application of polymer rheology and transport phenomena to predict performance, including polymer rheology and constitutive equations, mixing, extrusion, injection molding, coating flows, fiber spinning, film blowing, blow molding, compression molding, thermoforming and composites processing.
CHEE 585 FOUNDATIONS OF SOFT MATTER. (3) (3-0-6) Introduction to soft condensed matter. Atomic and molecular origins of hydrodynamics and elasticity. Microscale order and disorder, phase transitions and dynamics. Polymer solutions, melts and gels. Surfactants, self-assembled structures, and fluid membranes. Colloidal dispersions, their dynamics, gels and crystals. Liquid crystals. Integration of the foregoing topics with modern experimental techniques in soft-matter research.

CHEE 591 ENVIRONMENTAL BIOREMEDIATION. (3) (3-0-6) The presence and role of microorganisms in the environment, the role of microbes in environmental remediation either through natural or human-mediated processes, the application of microbes in pollution control and the monitoring of environmental pollutants.

CHEE 592 INDUSTRIAL AIR POLLUTION CONTROL. (3) (3-0-6) (Prerequisite: CHEE 314 or permission of instructor.) (Restriction: Not open to students who have taken CHEE 472.) Air pollution effects, control laws and regulations, measurements; emission estimates, meteorology for air pollution control engineers, dispersion models, nature of particulate pollutants, control of primary particulates, control of volatile organic compounds, sulfur oxides and nitrogen oxides; air pollutants and global climate.

CHEE 593 INDUSTRIAL WATER POLLUTION CONTROL. (3) (3-0-6) (Prerequisite: CHEE 314 or equivalent.) Principles of colloid chemistry for solid-liquid separations of environmental interest: (i) transport and fate of biocolloids and colloid-associated contaminants in waters and solids, and (ii) membrane-based water and wastewater filtration. Topics include: biocolloid-surface interactions, membrane process design, fouling and biofouling, experimental techniques, novel research developments.

CHEE 594 BIOCOLLOIDS IN ENVIRONMENTAL SYSTEMS. (3) (3-0-6) (Prerequisite: CHEE 315 or equivalent.) Principles of colloid chemistry for solid-liquid separations of environmental interest: (i) transport and fate of biocolloids and colloid-associated contaminants in waters and solids, and (ii) membrane-based water and wastewater filtration. Topics include: biocolloid-surface interactions, membrane process design, fouling and biofouling, experimental techniques, novel research developments.

CHEE 595 ENERGY RECOVERY, USE, & IMPACT. (3) (3-0-6) (Prerequisite: CHEE 423 or permission of instructor.) Application of chemical engineering fundamentals to energy recovery, conversion, and environmental impact. Topics include thermodynamics of fossil fuel deposits, reaction engineering of fuel upgrading, power generation, operation of power sources, production/use of alternative fuels, environmental impact and pollution mitigation technologies dealing with energy use.

CHEE 611 HEAT AND MASS TRANSFER. (4) Heat and mass transfer in laminar and turbulent flows; scaling; models for interphase transport.

CHEE 621 THERMODYNAMICS. (4) Theory and application of phase and chemical equilibria in multicomponent systems.

CHEE 631 FOUNDATIONS OF FLUID MECHANICS. (4) Rigorous derivation of equations of motion; creeping flow inviscid flow; boundary layer theory; hydrodynamic stability; turbulent flow, separated flows, drag on submerged bodies.

CHEE 641 CHEMICAL REACTION ENGINEERING. (4) Interpretation of chemical reaction data, especially for heterogeneous systems. Residence time, complete segregation, maximum mixedness, other advanced concepts. Reactor design.

CHEE 643 THERMAL PLASMA TECHNOLOGY. (3) (Prerequisite: Permission of the instructor) An introduction to thermal (high temperature) plasmas as applied to chemical and materials engineering. Degree of ionization, velocity distribution function, plasma parameters, collisions and diffusion, energy states, plasma generation, diagnostic techniques for plasma and particles, particle-plasma interaction, mathematical modelling of plasma systems, applications.

CHEE 662 COMPUTATIONAL METHODS. (4) Methods of weighted residuals; solution to non-linear algebraic equations; stability in nonlinear equations; bifurcations; mesh refinement strategies; convection dominated transport; hyperbolic equations, particle simulation methods.

CHEE 672 PROCESS DYNAMICS AND CONTROL. (4) (Prerequisite: CHEE 455) Process representation and identification and simulation; sensor stability; sensitivity of feedback control systems; feedback control; discrete representation of continuous systems; controller tuning; adaptive control.

CHEE 681 LABORATORY SAFETY 1. (1) (M.Eng. students must complete the course by the end of the first year of their degree. Ph.D. students must complete the course by the end of the third term of their degree.) (Corequisite: CHEE 681) (Restriction: Restricted to Chemical Engineering students.) The basics of laboratory safety in a chemical engineering laboratory. Mandatory safety orientation (administration, contacts, fire, waste, emergency procedures) and official WHIMIS training.

CHEE 682 LABORATORY SAFETY 2. (1) (M.Eng. students must complete the course by the end of the first year of their degree. Ph.D. students must complete the course by the end of the third term of their degree.) (Corequisite: CHEE 682) (Restriction: Restricted to Chemical Engineering students.) Demonstration of the safety of students' thesis experiments to the departmental safety committee.

CHEE 690 RESEARCH TECHNIQUES. (3) This course introduces techniques and develops skills necessary for commencing a particular thesis research project. A written report is required.

CHEE 694 ORAL PRESENTATION SKILLS. (1) Basic technical presentation skills used during graduate studies and career. Topics include: preparation and delivery of technical seminars, lectures and tutorials, analysis of and positive feedback on seminars, lectures and tutorials and individual and group rehearsals.

CHEE 695 PROJECT IN CHEMICAL ENGINEERING. (6) Independent work under the general direction of a full-time staff member, on a problem of industrially-oriented design or research leading to a comprehensive report.

CHEE 696 EXTENDED PROJECT. (6) Extended independent work on a problem of industrially-oriented design or research, leading to a comprehensive project report.

CHEE 697 THESIS PROPOSAL. (6) Independent work under the supervision of the thesis advisor(s) leading to a thesis proposal.

CHEE 698 THESIS RESEARCH 1. (12) Ongoing research pertaining to thesis.

CHEE 698N1 THESIS RESEARCH 1. (6) (Students must also register for CHEE 698N2) (No credit will be given for this course unless both CHEE 698N1 and CHEE 698N2 are successfully completed in a twelve month period) (CHEE 698N1 and CHEE 698N2 together are equivalent to CHEE 698) Ongoing research pertaining to thesis.

CHEE 698N2 THESIS RESEARCH 1. (6) (Prerequisite: CHEE 698N1) (No credit will be given for this course unless both CHEE 698N1 and CHEE 698N2 are successfully completed in a twelve month period) (CHEE 698N1 and CHEE 698N2 together are equivalent to CHEE 698) Ongoing research pertaining to thesis.

CHEE 699 THESIS RESEARCH 2. (13) (Prerequisite: CHEE 698) Ongoing research pertaining to thesis.

CHEE 795 PH.D. THESIS PROPOSAL. (0) Independent work under the supervision of the thesis advisor(s) leading to a thesis proposal.

CHEE 796 PH.D. PROPOSAL DEFENCE. (0) Presentation and defence of thesis proposal at an oral examination.

CHEE 797 PH.D. SEMINAR. (0) (Prerequisite: CHEE 796) Required for all Ph.D. candidates. Presentation of a seminar on an aspect of their thesis work.
14 Chemistry

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Montreal, QC H3A 2K6
Canada

Phone: 514-398-6999
Fax: 514-398-3797
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Website: www.mcgill.ca/chemistry

Chair — R.B. Lennox
Director of Graduate Studies — M.J. Damha

14.1 Staff

Emeritus Professors

B.C. Ev; B.Sc.(Seoul), Ph.D.(Brown)
J.F. Harrod; B.Sc., Ph.D.(Birm.), F.R.S.C.
A.S. Hay; B.Sc.(Alta.), Ph.D.(Ill.), F.R.S.
R.H. Marchessault; B.Sc.(Montr.), Ph.D.(McG.), F.C.I.C., F.R.S.C.
M. Onyszchuk; B.Sc.(McG.), M.Sc.(W. Ont.), Ph.D.(Cant.), Ph.D.(McG.), F.C.I.C.
M. Purdy; B.A.(Amh.), Ph.D.(MIT), F.C.I.C.
D. Patterson; M.Sc.(McG.)
D.G. Gray; B.Sc.(Belf.), M.Sc., Ph.D.(Man.), F.C.I.C.
M.J. Damha; B.Sc., Ph.D.(McG.), F.C.I.C.
A. Eisenberg; B.S.(Wor. Poly.), M.A., Ph.D.(Prin.), F.C.I.C.
D.G. Gray; B.Sc.(Belf.), M.Sc., Ph.D.(Man.), F.C.I.C.
D.O. Hall; B.A.(Middleby.), M.A.(Wesl.), Ph.D.(N. Carolina), F.C.I.C.
R.B. Lennox; B.Sc., M.Sc., Ph.D.(Tork.), F.C.I.C.
C.J. Li; B.Sc.(Zhengzhou), M.S.(Chinese Academy of Sciences), Ph.D.(McG.)
D.M. Ronis; B.Sc.(McG.), Ph.D.(MIT)
E.D. Salin; B.Sc.(Calif.), Ph.D.(Ore.), F.C.I.C.
B.C. Sanctuary; B.Sc., Ph.D.(Br. Col.)
T.G.M. van de Ven; Kand. Doc.(Utrecht), Ph.D.(McG.), F.C.I.C.

Professors

D.S. Bohle; B.A.(Reed), M.Phil., Ph.D.(Auck.)
D.H. Burns; B.Sc.(Puget Sound), Ph.D.(Wash.)
I.S. Butler; B.Sc., Ph.D.(Bristl.), F.C.I.C.
M.J. Damha; B.Sc., Ph.D.(McG.), F.C.I.C.
A. Eisenberg; B.S.(Wor. Poly.), M.A., Ph.D.(Prin.), F.C.I.C.
D.G. Gray; B.Sc.(Belf.), M.Sc., Ph.D.(Man.), F.C.I.C.
R.B. Lennox; B.Sc., M.Sc., Ph.D.(Tork.), F.C.I.C.
C.J. Li; B.Sc.(Zhengzhou), M.S.(Chinese Academy of Sciences), Ph.D.(McG.)

Associate Professors

M.P. Andrews; B.Sc., M.Sc., Ph.D.(Tork.)
P. Arinya; B.Sc., Ph.D.(York)
B.A. Arndtsen; B.A.(Car.), Ph.D.(Stan.)
C.J. Barrett; B.Sc., M.Sc., Ph.D.(Qu.)
W.C. Galley; B.Sc.(McG.), Ph.D.(Calif.)
J.L. Gleason; B.Sc., Ph.D.(Va.)
A. Kakkar; B.Sc., M.Sc.(Chan. U., India), Ph.D.(Wat.)
J.F. Power; B.Sc., Ph.D.(C'dia)
L. Reven; B.A.(Car.), Ph.D.(ill.)
H. Sleiman; B.Sc.(A.U.B.), Ph.D.(Stan.)

Assistant Professors

K. Kauclair; B.Sc.(U.Q.A.C.), Ph.D.(Alta.)
A.S. Blum; B.A.(Prin.), Ph.D.(Wash.)
M. Bourqui; B.Sc.(EFP Lausanne), Ph.D.(ETH Zürich)
P. Kambhampati; B.A.(Carleton Coll.), Ph.D.(Texas)
U.M. Lindstrom; B.Sc., L.Chem.Eng.(Lund), Ph.D.(Stockholm)
A. Mittermaier; B.Sc.(Guelph), Ph.D.(Tor.)
N. Moitessier; B.A., Ph.D.(Nancy)
A. Moores; B.Sc., Ph.D.(Ecole Polytechnique, Paris)
B. Siwick; B.A.Sc. Eng. Sci., M.Sc., Ph.D.(Tork.)
P. Wiseman; B.Sc.(St. FX), Ph.D.(W. Ont.)

Lecturers

J.F. Finkenbine, G. Wilczek

Associate Members

J.A. Finch (Mining, Metals and Materials Engineering), O.A. Mamer (University Clinic, RVH), P. Grütter (Physics)

Adjunct Professors


14.2 Programs Offered


The Department offers the Chemical Biology interdisciplinary graduate option, together with the Departments of Biochemistry, Pharmacology and Therapeutics. Students interested in training in this option must first be accepted for graduate studies by one of the participating departments. Information on this option can be found at www.mcgill.ca/biochemistry/chemicalbiology.

Research in Chemistry

Members of the Department are organized into various research groups. Some of the current research interests are listed below, and are presented in much more detail on the departmental website at www.chemistry.mcgill.ca.

Analytical – Environmental

Analytical-Environmental research at McGill entails a wide range of exciting fundamental and applied research with focus on state-of-the-art instrumental development in spectroscopy, imaging, chemometric and analytical bio-spectroscopy, artificial intelligence, ultra trace sampling, state-of-the-art atmospheric kinetics and photochemistry, thermochemical, box and cloud modelling, as well as the development and application of state-of-the-art numerical models of the chemistry of the regional and global atmosphere. Our collective research has direct implications in fields such as materials, environmental, and biomedical chemistry.

Chemical Biology

The Chemical Biology Research Activity Group is engaged in a diverse range of research topics which range from structural biology, enzymology, nucleic acid research and signalling pathways to biophysical chemistry of living tissues. Among the themes which unite the research being performed in this group is trying to learn new chemistry and physics from biological systems. We have projects relating to pharmaceutically relevant enzymes such as those involved in Alzheimer's and antibiotic resistance; development of therapeutic agents in the control of inflammation, cancer and viral infections; the chemical biology of NO; quantification of bioenergetic markers of metabolism; self-assembly mechanisms of the HIV-1 virion capsid; liposome microarray systems to address membrane protein dynamics and recognition; studies on reactive oxygen species translocation across the aqueous/lipid membrane interface; RNAi/antisense technologies; dynamic combinatorial chemistry; protein dynamics and function; mechanistic aspects involved in cellular adhesion and transport in membrane and zeolite channels; and cutting-edge microscopes used to examine transport, motility, and reactivity in cells.

Chemical Physics

The research interests of the members of the Chemical Physics Thematic group are diverse, with groups focusing on high-end laser and NMR spectroscopies, kinetics and modelling of atmospheric chemical reactions, experimental and theoretical biophysical chemistry, polymers at interfaces and statistical and quantum mechanics. In the field of biophysical chemistry, single molecule spectroscopy is being used to probe enzyme function as well as DNA recombination and repair. Our recent advances in image correlation spectroscopic techniques now allow researchers to precisely follow the macromolecular dynamics in living cells. In a similar vein, breakthrough ultra-fast electron diffraction experiments have opened the window to real time observation of the
making and breaking of chemical bonds. State-of-the-art multi-pulse femtosecond spectroscopy experiments are being applied to interesting and technologically important new materials such as photonic crystals and quantum dot superlattices. A molecular-level picture of polymer dynamics and structure at surfaces and interfaces is being developed through theoretical modelling, high field solids NMR spectroscopy, electron microscopy and other surface characterization methods. In the area of atmospheric chemistry, the chemical transformation of the atmosphere is being modelled both experimentally and theoretically to understand how these processes are currently affecting and driving climate change. Finally, we have basic theory projects relating to the experimental work just described, as well as in transport and structure in complex colloidal or zeolite systems, protein dynamics, and fundamental issues in quantum and statistical mechanics.

Materials Chemistry
The Chemistry of Materials is a rapidly evolving domain of research. Materials Chemistry seeks to understand how composition, reactivity, and structure are related to function from a molecular perspective. The functionality of materials is expressed in a variety of areas including photonics, micro- and nano-electronics, biosystems, nanotechnology, drug delivery, catalysis, polymer science, molecular biology, and chemical and biological sensing. Activities of the Materials Chemistry Group are often broadly interdisciplinary. University-wide synergies among members of this group have led to the creation of the McGill Institute for Advanced Materials (MIAM) and the McGill Nanotools Facility. The latter comprises state-of-the-art micro/nanofabrication, atomic manipulation and high performance computing facilities. MIAM and members of the Chemistry Department have established research that links the Centre for Self Assembled Chemical Structures, the Centre for Biosensors and Biorecognition, the Centre for the Physics of Materials, and the Centre for Bone and Periodontal Research. Synthetic approaches to new materials include research in dendrimers, polynucleic acid architectures, polymers that conduct electrons or light and biopolymers. Polymer and colloid science figure prominently as does research and applications of the chemistry and physical properties of nanostructures. There is significant activity in understanding directed molecular assembly at interfaces and in the application of sophisticated spectroscopic tools to explore them.

Synthesis – Catalysis
The Synthesis/Catalysis Research Activity Group is a collective to develop the state-of-art catalysts, synthetic methodologies, reaction mechanisms, and synthetic routes for organic chemicals, natural products and materials. The following are the major research activities at McGill. (1) Development of novel catalysts and catalytic reactions for highly efficient organic synthesis; Green Chemistry. This includes the study and discovery of novel transition-metal catalysts, biological catalysts, nano- and dendrimer-based catalysts for synthetic purposes; new chemical reactivity such as C-H activation, asymmetric catalysis and theory, multi-component reactions and combinatorial chemistry; innovative chemistry in alternative solvents such as water, sub-critical water, ionic liquids, and liquid CO2; photocatalytic reactions; reaction mechanisms; and physical organic chemistry; and computational chemistry. (2) Synthesis of biological compounds, organic materials and natural products: Focus areas are total synthesis of natural products, synthesis of DNA and RNA analogues; synthesis of antiviral and anticancer nucleoside analogues, synthesis of amino acid and peptides; synthesis and study of carbohydrate derivatives; design, synthesis and study of specialty organic chemical and materials and study of specialty organic chemical and materials.

14.3 Admission Requirements
The minimum academic standard for admission to research thesis M.Sc., Ph.D. and the M.Sc. (Applied) degree programs is 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. Applicants from other institutions should have an academic background equivalent to that of a McGill graduate in the Chemistry Honours/Major programs. If possible, candidates should specify the field of research in which they are interested.

Admissions Requirements - Chemical Biology Option
As for the regular graduate programs of the participating departments, acceptance into the Chemical Biology Option consists of two steps:

1. Preliminary approval by the Department's Graduate Committee based on the student's transcript, references and other documents submitted with the application. The criteria for assessment at this level are the same as for the regular graduate programs of the participating departments.
2. Acceptance by an individual research director. For students wishing to participate in the Chemical Biology Option, the director must propose a research project for the student that provides training in the methods and philosophy of chemical biology. Project proposals are assessed by the Chemical Biology Program Committee.

14.4 Application Procedures
Dates for Guaranteed Consideration For dates for guaranteed consideration, please consult the following website: www.mcgill.ca/gradapplicants/programs. Then select the appropriate program.
Note: We are not willing to consider any applications to be admitted for the Summer term.

FINANCIAL ASSISTANCE
M.Sc. and Ph.D. Degrees
Financial assistance for accepted graduate students who do not hold fellowships or scholarships is normally available in the form of laboratory demonstrationships/assistantships, and occasionally by payment from research funds. Graduate students devote 12 hours per week (contact hours, plus grading of reports, etc.) during the academic session to their teaching duties. Financial assistance during the remainder of the year is provided from research funds. Scholarship holders, such as NSERC or awards of similar value, receive a tuition fee waiver.

M.Sc. (Applied) Degree
Financial assistance for candidates in the M.Sc. (Applied) program is not available during the two academic sessions when courses are taken, unless candidates are recipients of scholarships. During the four month project, candidates are paid at rates established by participating companies.

14.5 Program Requirements
M.Sc.* and Ph.D. Degrees
1. Students must take such examinations as may be required in (a) assigned courses given in the Department of Chemistry, (b) assigned cognate courses given in other departments.

2. Students must successfully complete a research project and submit an acceptable thesis.
3. Students must satisfy the examiners in an oral examination on the thesis and related subjects (required only of candidates for the Ph.D. degree).
4. All the usual requirements of Graduate and Postdoctoral Studies must be satisfied.

* This program requires 45 credits.
A minimum of 6 credits of course work is required; the balance of credits will be made up from either a combination of course work and thesis credits, or from thesis research credits only. There will be a minimum of 24 credits in the thesis research component.

Examinations in Chemistry

1. Examinations in assigned courses are normally taken by the candidates in December and May. In special circumstances, and with permission from the Department and Graduate and Postdoctoral Studies, they may be taken in September.

2. A candidate for the Ph.D. degree shall pass all such examinations, other than those in certain special courses, before the final year, except in special circumstances and then only with the approval of the Department.

M.Sc. (Applied) Degree
This program requires a minimum of 45 credits, 30 credits of course work (500 level and higher) plus a 15-credit project in some aspect of chemical industry, normally completed during a four month project.

In addition, students may be required to take advanced undergraduate courses if their background is deficient.

M.Sc. (Applied) in Chemistry (45 credits)

Complementary Courses (30 credits)
15 credits, five 3-credit CHEM courses at the 500 or 600 level, 15 credits, five 3-credit courses (500 level and higher) selected in consultation with the advisor.

Project (15 credits)
CHEM 699 (15) Project

M.Sc. in Chemistry (Thesis) (45 credits)
Required Courses (5 credits)
CHEM 650 (1) Seminars in Chemistry 1
CHEM 651 (1) Seminars in Chemistry 2
CHEM 688 (3) Assessment

Complementary Courses (40 credits)
9 - 16 credits
Students will normally take 9 - 16 credits of CHEM (or approved) courses at the 500 or 600 level.

Thesis (24 - 31 credits)
at least 24 credits, selected from:
CHEM 691 (3) M.Sc. Thesis Research 1
CHEM 692 (6) M.Sc. Thesis Research 2
CHEM 693 (9) M.Sc. Thesis Research 3
CHEM 694 (12) M.Sc. Thesis Research 4
CHEM 695 (15) M.Sc. Thesis Research 5
CHEM 696 (6) M.Sc. Thesis Research 6
CHEM 697 (9) M.Sc. Thesis Research 7
CHEM 698 (12) M.Sc. Thesis Research 8

Program Requirements - Chemical Biology Option
The curriculum of the Chemical Biology Option is structured so that in completing the option, students also complete the course requirements for the regular graduate programs in their home departments. For this reason, program requirements of courses are specified separately for each department, even though the ‘core’ content in Chemical Biology (9 lecture credits plus 2 or 4 seminar credits for each program) is the same for each.

M.Sc. in Chemistry – Chemical Biology Option/Concentration (45 credits)

Required Courses (5 credits)
CHEM 650 (1) Seminars in Chemistry 1
CHEM 651 (1) Seminars in Chemistry 2
CHEM 688 (3) Assessment

Complementary Courses (minimum 11 credits)

2 credits, two of the following courses:
BIOC 610 (1) Seminars in Chemical Biology 1
BIOC 611 (1) Seminars in Chemical Biology 3
CHEM 689 (1) Seminars in Chemical Biology 2
CHEM 690 (1) Seminars in Chemical Biology 4

Students will take at least 3 courses from the following list, including at least 3 credits from the first two courses listed below:
CHEM 502 (3) Advanced Bio-Organc Chemistry
CHEM 503 (5) Drug Design and Development 1
or PHAR 503
BIOC 603 (3) Genomics and Gene Expression
BIOC 604 (3) Macromolecular Structure
CHEM 504 (3) Drug Design and Development 2
or PHAR 504
CHEM 514 (3) Biophysical Chemistry
CHEM 522 (3) Stereocchemistry
CHEM 591 (3) Bioinorganic Chemistry
CHEM 621 (5) Reaction Mechanisms in Organic Chemistry
CHEM 629 (5) Organic Synthesis
CHEM 655 (4) Advanced NMR Spectroscopy
PHAR 562 (3) General Pharmacology 1
PHAR 563 (3) General Pharmacology 2
PHAR 707 (3) Molecular Pharmacology

The remaining credits may be graduate-level courses approved by the Department.

Thesis (minimum 24 credits)
at least 24 credits, selected from:
CHEM 691 (3) M.Sc. Thesis Research 1
CHEM 692 (6) M.Sc. Thesis Research 2
CHEM 693 (9) M.Sc. Thesis Research 3
CHEM 694 (12) M.Sc. Thesis Research 4
CHEM 695 (15) M.Sc. Thesis Research 5
CHEM 696 (6) M.Sc. Thesis Research 6
CHEM 697 (9) M.Sc. Thesis Research 7
CHEM 698 (12) M.Sc. Thesis Research 8

Ph.D. in Chemistry

Required Courses (5 credits)
CHEM 650 (1) Seminars in Chemistry 1
CHEM 651 (1) Seminars in Chemistry 2
CHEM 688 (3) Assessment

Comprehensive
CHEM 701 (0) Comprehensive Examination 1
CHEM 702 (0) Comprehensive Examination 2

Complementary Courses
Students entering the program with a M.Sc. degree will normally take three (3) graduate-level courses. Students entering without a M.Sc. degree will normally take five (5) graduate-level courses.

Thesis
Students may be required to take advanced undergraduate courses if background deficient.

Ph.D. in Chemistry – Chemical Biology Option/Concentration

Required Courses (9 credits)
CHEM 650 (1) Seminars in Chemistry 1
CHEM 651 (1) Seminars in Chemistry 2
CHEM 688 (3) Assessment
BIOC 610 (1) Seminars in Chemical Biology 1
BIOC 611 (1) Seminars in Chemical Biology 3
CHEM 689 (1) Seminars in Chemical Biology 2
CHEM 690 (1) Seminars in Chemical Biology 4

Comprehensive
CHEM 701 (0) Comprehensive Examination 1
CHEM 702 (0) Comprehensive Examination 2

Complementary Courses (minimum 9 credits)
Students entering the program with a M.Sc. degree will normally take three (3) graduate-level courses. Students entering without a M.Sc. degree will normally take five (5) graduate-level courses. At least 3 courses must be from the following list, including at least 3 credits from the first two courses listed below.

**CHEM 502** (3) Advanced Bio-Organic Chemistry

**CHEM 503** (3) Drug Design and Development 1 or **PHAR 503**

**BIOC 603** (3) Genomics and Gene Expression

**BIOC 604** (3) Macromolecular Structure

**CHEM 504** (3) Drug Design and Development 2 or **PHAR 504**

**CHEM 514** (3) Biophysical Chemistry

**CHEM 522** (3) Stereochemistry

**CHEM 581** (3) Bioinorganic Chemistry

**CHEM 621** (5) Reaction Mechanisms in Organic Chemistry

**CHEM 629** (5) Organic Synthesis

**CHEM 655** (4) Advanced NMR Spectroscopy

**PHAR 562** (3) General Pharmacology 1

**PHAR 563** (3) General Pharmacology 2

**PHAR 707** (3) Molecular Pharmacology

The remaining credits may be graduate-level courses approved by the Department.

**Thesis**

Students may be required to take advanced undergraduate courses if background deficient.

### 14.6 Courses

Students preparing to register should consult Class Schedule on the web at [www.mcgill.ca/student-records/register/class-schedule](http://www.mcgill.ca/student-records/register/class-schedule) for the most up-to-date list of courses available; courses may have been added, rescheduled or cancelled after this Calendar was published. Class Schedule lists courses by term and includes days, times, locations, and names of instructors. Term(s) offered (Fall, Winter, Summer) may appear after the credit weight to indicate when a course would normally be taught. Please check Class Schedule to confirm this information.

**Note:** All undergraduate courses administered by the Faculty of Science (courses at the 100 to 500 level) have limited enrolment. The course credit weight is given in parentheses after the title.

**Advanced Undergraduate Courses**

Undergraduate courses may be required of a student who is admitted to a graduate program if deficiencies are perceived in the student's previous training. Descriptions of undergraduate courses may be found in the Faculty of Science section of the Undergraduate Programs Calendar available at [www.mcgill.ca/courses](http://www.mcgill.ca/courses).

**CHEM 502 ADVANCED BIO-ORGANIC CHEMISTRY.** (3) (Winter) (3 lectures) (Prerequisite: CHEM 302) (Restriction: Not open to students who have taken CHEM 402.) This course will cover biologically relevant molecules, particularly nucleic acids, proteins, and their building blocks. In each case, synthesis and biological functions will be discussed. The topics include synthesis of oligonucleotides and peptides; chemistry of phosphates; enzyme structure and function; coenzymes, and enzyme catalysis; polyketides; antiviral and anticancer agents.

**CHEM 503 DRUG DESIGN AND DEVELOPMENT 1.** (3) (Fall) (Prerequisites: CHEM 302, BIOL 200, BIOL 201 or BIOC 212, or permission of instructor) (Restriction: U3 and graduate students. Students can register only with permission of coordinators.) Interdisciplinary course in drug design and development covering combinatorial chemistry, process chemistry, structure-activity relationship, pharmacokinetics and metabolism, mechanisms of action and steps in drug development, and principles and problems in drug design.

**CHEM 504 DRUG DESIGN AND DEVELOPMENT 2.** (3) (Winter) (Prerequisite: CHEM 503 and permission of instructor) (Restriction: U3 and graduate students. Students can register only with permission of coordinators.) Computational methods used in drug design and discovery including QSAR, docking/scoring, molecular mechanics and molecular dynamics, QM/MM, library profiling and library design.

**CHEM 514 BIOPHYSICAL CHEMISTRY.** (3) (Winter) (Prerequisite: CHEM 203 or CHEM 204 or CHEM 223 and CHEM 243, or permission of instructor.) (Restriction: Not open to students who have taken CHEM 404.) Physical chemistry concepts needed to understand the function of biological systems at the molecular level, including the structure, stability, transport, and interactions of biological macromolecules.

**CHEM 531 CHEMISTRY OF INORGANIC MATERIALS.** (3) (Winter) (3 lectures) (Prerequisite: CHEM 381) Structure, bonding, synthesis, properties and applications of covalent, ionic, metallic crystals, and amorphous solids. Defect structures and their use in synthesis of specialty materials such as electronic conductors, semiconductors, and superconductors, and solid electrolytes. Basic principles of composite materials and applications of chemistry to materials processing.

**CHEM 533 SMALL MOLECULE CRYSTALLOGRAPHY.** (3) (Fall) (Prerequisite: CHEM 355 or permission of instructor.) Fundamentals of x-ray diffraction related to small molecule structure resolution, space groups, diffraction theory, strategies for structure solution, and refinement will be covered.

**CHEM 534 NANOSCIENCE AND NANOTECHNOLOGY.** (3) (Fall) (Corequisites: one of CHEM 345, PHYS 357, or PHYS 446) Topics discussed include scanning probe microscopy, chemical self-assembly, computer modelling, and microfabrication/micromachining.

**CHEM 543 CHEMISTRY OF PULP AND PAPER.** (3) (Fall) (2 lectures plus a reading/research project) (Prerequisite: CHEM 302 or permission of instructor.) The industrial processes for converting wood to paper are described with emphasis on the relevant organic, physical, surface chemistry and colloid chemistry. The structure and organization of the polymeric constituents of wood are related to the mechanical, optical and other requisite properties of paper.

**CHEM 547 LABORATORY AUTOMATION.** (3) (Winter) (Two 1.5 hour lectures, lab) (Prerequisite: CHEM 377, equivalent or permission of instructor) Automation and data handling with respect to modern chemical laboratory instrumentation. Basic electronics, data acquisition, evaluation of laboratory needs, data processing methodologies.

**CHEM 552 PHYSICAL ORGANIC CHEMISTRY.** (3) (Fall) (Prerequisite: CHEM 302) The correlation of theory with physical measurements on organic systems; an introduction to photochemistry; solvent and substituent effects on organic reaction rates, etc.; reaction mechanisms.

**CHEM 555 NMR SPECTROSCOPY.** (3) (Fall) (3 lectures) (Prerequisite: CHEM 355 or equivalent) Interpretation of proton and carbon-13 nuclear magnetic resonance spectroscopy in one dimension for structural identification.

**CHEM 556 ADVANCED QUANTUM MECHANICS.** (3) (Fall) (3 lectures) (Prerequisites: CHEM 345 and PHYS 242) Quantum mechanical treatment of species of chemical interest. Introduction to perturbation theory, both time-dependent and time-independent. Treatment of the variational principle. Introduction to atomic spectra. Chemical bonding in terms of both the valence bond and molecular orbital theory. Elementary collision theory. Interaction of radiation with molecules.

**CHEM 567 CHEMOMETRICS: DATA ANALYSIS.** (3) (Winter) (2 lectures and 3 hours of laboratory) (Prerequisite: Linear Algebra and experience in some computer programming language) Topics covered include: factorual analysis of chemical spectra, pattern recognition from multisensor data, linear and nonlinear optimization for
the determination of optimal reaction conditions molecular modeling, multi sensor calibration, etc.

**CHEM 571 POLYMER SYNTHESIS.** (3) (Winter) (3 lectures) (Prerequisite: CHEM 302 or equivalent, or permission of instructor.) A survey of polymer preparation and characterization; mechanisms of chain growth, including free radical, cationic, anionic, condensation and transition metal-mediated polymerization, and the effects of these mechanisms on polymer architecture; preparation of alternating, block, graft and stereo block copolymers; novel macromolecular structures including dendrimers and other nanostructures.

**CHEM 572 SYNTHETIC ORGANIC CHEMISTRY.** (3) (Winter) (3 lectures) (Prerequisite: CHEM 382) Synthetic methods in organic chemistry and their application to the synthesis of complex molecules.

**CHEM 575 CHEMICAL KINETICS.** (3) (Winter) (3 lectures) (Prerequisites: CHEM 273 and CHEM 223/ CHEM 243 (formerly CHEM 213)). Kinetic laws, measurement of reaction rates, transition state and collision theory, experimental techniques in reaction kinetics, reaction mechanisms, RRKM theory, Marcus theory of electron transfer, photochemistry and catalysis. Recent developments and their application to chemical and biological problems. Elementary reactions in gas, solution and solid phases and on surfaces.

**CHEM 581 INORGANIC TOPICS 1.** (3) (Winter) (Prerequisite: CHEM 381) An introduction to some areas of current interest in inorganic chemistry. Each year a selection of several particularly active areas will be chosen.

**CHEM 582 SUPRAMOLECULAR CHEMISTRY.** (3) (Winter) (3 lectures) (Prerequisites: CHEM 222, CHEM 381) Introduction to supramolecular organization will be followed by discussions on the nature of interactions and methodologies to create ordered aggregates of high complexity. Potential of supramolecular chemistry in fabricating smart materials will be explored using specific topics including inclusion chemistry, dendrimers, molecular self-assembly and crystal engineering.

**CHEM 585 COLLOID CHEMISTRY.** (3) (Winter) (Prerequisites: CHEM 345, MATH 233 and MATH 315, PHYS 241 and PHYS 242. Students who haven't taken CHEM 223 and CHEM 243 must have taken CHEM 273 or permission of instructor.) Principles of the physical chemistry of phase boundaries. Electrical double layer theory; van der Waals forces; Brownian motion; kinetics of coagulation; electrokinetics; light scattering; solid/liquid interactions; adsorption; surfactants; hydrodynamic interactions; rheology of dispersions.

**CHEM 587 TOPICS IN MODERN ANALYTICAL CHEMISTRY.** (3) (Fall) (Prerequisites: CHEM 367 and CHEM 377) A survey of recent topics in optical spectroscopic micro-imaging including methods based on Raman, photo-luminescence, photo-thermal and infrared absorption. Coverage is also given to analysis of the optics, instrumentation and image processing specific to spectroscopic imaging.

**CHEM 591 BIOINORGANIC CHEMISTRY.** (3) (Winter) (3 hours) (Prerequisite: CHEM 381) (Restriction: For Honours and Major Chemistry students or with permission) The roles of transition and main group elements in biology and medicine will be examined with an emphasis on using tools for structure and genome searching as well as becoming acquainted with experimental spectroscopic methods useful for bioinorganic chemistry such as macromolecular X-ray diffraction, EPR and EXAFS.

**CHEM 593 STATISTICAL MECHANICS.** (3) (Winter) (3 lectures) (Research project) (Prerequisite: CHEM 345, Recommended: CHEM 365) Basic hypotheses of statistical thermodynamics; ideal monatomic, diatomic and polyatomic gases; Einstein and Debye models of solids; statistical theory of black-body radiation; Debye-Hückel theory of electrolyte solutions; absolute reaction rate theory of rate processes; theories of solutions.

**CHEM 597 ANALYTICAL SPECTROSCOPY.** (3) (Fall) (2 lectures; 3 hours lab) (Prerequisites: CHEM 367 and CHEM 377) The design and analytical use of spectroscopic instrumentation with respect to fundamental and practical limitations. Classical emission, fluorescence, absorption and chemical luminescence. Topics may include photo-acoustic spectroscopy, multielement analysis, X-ray fluorescence and modern multiwavelength detector systems.

**CHEM 611 INORGANIC TOPICS 2.** (4) (This advanced level course surveys recent trends in inorganic chemistry. Students select a topic from the current literature, research the topic, present periodic oral reports and a final summary paper. The instructor participates as a tutor and gives occasional oral presentations on topics of his choice.

**CHEM 612 ORGANOMETALLIC CHEMISTRY.** (5) A first course at the graduate level in organometallic chemistry. The theory and practice of the field is treated starting from basic principles of inorganic and organic chemistry.

**CHEM 619 ADVANCED ATMOSPHERIC CHEMISTRY.** (4)

**CHEM 621REACTION MECHANISMS IN ORGANIC CHEMISTRY.** (5) A systematic survey of the mechanisms of the most common organic reactions from studies of reactions in the current literature.

**CHEM 629 ORGANIC SYNTHESIS.** (5) An advanced course in the synthesis of organic molecules with an emphasis on stereoselective transformations. Topics will include multiple bond formation, functional group interconversions, carbon-carbon bond formation and stereoselective oxidations and reductions.

**CHEM 631D1 (2), CHEM 631D2 (2) SELECTED TOPICS IN ANALYTICAL CHEMISTRY.** (Students must register for both CHEM 631D1 and CHEM 631D2) (No credit will be given for this course unless both CHEM 631D1 and CHEM 631D2 are successfully completed in consecutive terms). A directed reading course with individual student-professor conferences, and intended mainly for students specializing in analytical chemistry. Topics are chosen to meet the individual needs of each student.

**CHEM 636 LABORATORY AUTOMATION 2.** (5) (Prerequisite: CHEM 547) Students will undertake a chemical laboratory automation project. Design and implementation problems will be discussed by the students in seminars and advanced topics in automated chemical instrumentation will be presented. Several experiments will be required.

**CHEM 646 ADVANCED STATISTICAL MECHANICS.** (4) Intermediate and advanced topics in statistical mechanics. Material to be covered will include: graphical methods, modern theories of dense gases and liquids, steady and dynamic critical phenomena, time-correlation functions, light-scattering and nonequilibrium phenomena.

**CHEM 647 PHYSICAL CHEMISTRY: SPECIAL TOPIC 1.** (4)

**CHEM 648 PHYSICAL CHEMISTRY: SPECIAL TOPIC 2.** (4)

**CHEM 650 SEMINARS IN CHEMISTRY 1.** (1) (1 seminar) (Required of first year graduate students in Chemistry.) A seminar course designed for graduate students in chemistry which in conjunction with McGill Chemical Society will provide exposure to a broad range of special topics within the discipline.

**CHEM 651 SEMINARS IN CHEMISTRY 2.** (1) (1 seminar) (Required of first year graduate students in Chemistry.) A seminar course designed for graduate students in chemistry which in conjunction with McGill Chemical Society will provide exposure to a broad range of special topics within the discipline.

**CHEM 655 ADVANCED NMR SPECTROSCOPY.** (4) (1 lecture) (Prerequisite: CHEM 555 or equivalent.) Advanced techniques of nuclear magnetic resonance spectroscopy, Fourier transform methods, multiple pulsing, two-dimensional pulse sequencing.

**CHEM 661 LITERATURE REVIEW AND PROPOSAL.** (3) (Restriction: graduate students in Chemistry.) Students will review the relevant literature concerning their particular area of research and describe plans for future work.
CHEM 673 POLYMERS IN SOLUTIONS. (4) Thermodynamics of regular and of polymer solutions; osmotic pressure; phase separations; polymer configurations; light scattering; ultracentrifugation; viscometry; gel permeation chromatography; polyelectrolytes.

CHEM 674 INTRODUCTORY PHYSICAL CHEMISTRY - POLYMERS. (4) A survey course on the structure of polymers; kinetics and mechanisms of polymer synthesis; molecular weight distributions; polymer configurations and the thermodynamics of polymer solutions; rubber, elasticity, osmometry and viscosity.

CHEM 686 WET-END PAPERMAKING CHEMISTRY. (3) (Restriction: graduate students in Chemistry or Chemical Engineering or permission of instructor.) (Prerequisites: CHEM 543 and CHEM 585) Review of the chemistry of various additives used in papermaking, such as wet and dry strength agents, sizing agents, fillers, filler retention aids, antifoam agents, biocides, dyes, dewatering agents, drainage and formation aids. The course also addresses the chemistry of deinking of waste papers and the treatment of effluents.

CHEM 688 ASSESSMENT. (3) (Restriction: Restricted to graduate students in Chemistry.) An evaluation that is completed before the end of the second year of registration.

CHEM 690 SEMINARS IN CHEMICAL BIOLOGY 2. (3) (Restriction: Open only to students registered for the M.Sc. or Ph.D. Graduate Option in Chemical Biology.) Second multidisciplinary seminar in chemical biology.

CHEM 691 M.SC. THESIS RESEARCH 1. (3) Independent research work leading to writing of M.Sc. thesis for final submission to Graduate and Postdoctoral Studies.

CHEM 692 M.SC. THESIS RESEARCH 2. (6) Independent research work leading to writing of M.Sc. thesis for final submission to Graduate and Postdoctoral Studies.

CHEM 693 M.SC. THESIS RESEARCH 3. (9) Independent research work leading to writing of M.Sc. thesis for final submission to Graduate and Postdoctoral Studies.

CHEM 694 M.SC. THESIS RESEARCH 4. (12) Independent research work leading to writing of M.Sc. thesis for final submission to Graduate and Postdoctoral Studies.

CHEM 695 M.SC. THESIS RESEARCH 5. (15) Independent research work leading to writing of M.Sc. thesis for final submission to Graduate and Postdoctoral Studies.

CHEM 696 M.SC. THESIS RESEARCH 6. (6) Independent research work leading to writing of M.Sc. thesis for final submission to Graduate and Postdoctoral Studies.

CHEM 697 M.SC. THESIS RESEARCH 7. (9) Independent research work leading to writing of M.Sc. thesis for final submission to Graduate and Postdoctoral Studies.

CHEM 698 M.SC. THESIS RESEARCH 8. (12) Independent research work leading to writing of M.Sc. thesis for final submission to Graduate and Postdoctoral Studies.

CHEM 701 COMPREHENSIVE EXAMINATION 1. (0) (Restriction: Ph.D. students in Chemistry.) An evaluation that is completed before the end of the third year of registration.

CHEM 702 COMPREHENSIVE EXAMINATION 2. (0) (Restriction: Ph.D. students in Chemistry.) An evaluation that is completed before the end of the fourth year of registration.

CHEM 721 ORGANIC CHEMISTRY RESEARCH SEMINAR. (3) Upon completion of the organic cumulative examinations, students will present a seminar on their research work (including background and future plans).

CHEM 763 RESEARCH REPORT 2. (3) (Restriction: graduate students in Chemistry.) Students will prepare a research proposal, or nearly complete research project and discuss these results.

15 Civil Engineering and Applied Mechanics

Department of Civil Engineering and Applied Mechanics
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Acting Chair — V.T.V. Nguyen
Chair of Graduate Program — S. Gaskin

15.1 Staff

Emeritus Professors
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.
J. Nicoll; B.A.Sc., M.A.Sc., Ph.D.(Windsor), P.Eng.
S.C. Shrivastava; B.Sc.(Eng.)(Vikram), M.C.E.(Del.), Sc.D.(Col.)

Associate Professors
S.J. Gaskin; B.Sc.(Eng.) (Qu.), Ph.D.(Camb.), 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.
C. Rogers; B.A.Sc., M.A.Sc.(Wat.), Ph.D.(Sydney), P.Eng.
Y. Shao; B.Sc., M.S.(Tongji), Ph.D.(Nwestern), P.Eng.

Assistant Professors
A.J. Boyd; B.Sc.Eng.(New Br.), M.A.Sc.(Tor.), P.Eng., F.A.C.I.
D. Frigon; B.Sc., M.Sc.(Mcg.), Ph.D.(Ill.-Urbana-Champaign)
M.A. Meguid; B.Sc.(Cairo), M.Sc., Ph.D.(W. Ont.), P.Eng.
S. Miranda-Moreno; B.Sc., M.Eng.(Mexico), Ph.D.(Wat.)

Adjunct Professors
15.2 Programs Offered
Advanced courses of instruction and laboratory facilities are available for engineering graduate students desiring 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, and environmental engineering.

M.Eng. (Environmental Engineering Option)
This program is offered to students with a university undergraduate degree in engineering who desire graduate education in the environmental engineering field. This 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. Candidates must possess a bachelor's degree in engineering.

M.Sc. Candidates with a bachelor's degree in a discipline other than Engineering, such as Science or Arts, may be accepted into a 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, as outlined in section 15.5, "Program Requirements".

15.3 Admission Requirements
The general rules of Graduate and Postdoctoral Studies apply and are detailed in the General Information section. The minimum academic standard for admission is a cumulative grade point average (CGPA) of 3.0/4.0.

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 grade of 580 or better on the paper-based (237) or the computer-based (TOEFL) Test of English as a Foreign Language (TOEFL) for entry to the Ph.D. program, and 550 on the paper-based (213) or the computer-based (TOEFL) for other programs. For Candidates who write the iBT TOEFL, the minimum requirement will be 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.toefl.org).

15.4 Application Procedures
Applications will be considered upon receipt of:
1. application form;
2. two official transcripts;
3. two confidential letters of reference;
4. $100 application fee;
5. test results (TOEFL).

Applicants are requested to address their completed forms for admission to the Chair of the Graduate Studies Admissions Committee, Department of Civil Engineering and Applied Mechanics.

Dates for Guaranteed Consideration
For dates for guaranteed consideration, please consult the following website: www.mcgill.ca/gradapplicants/programs. Then select the appropriate program.

McGill's online application form for graduate program candidates is available at www.mcgill.ca/gradapplicants/apply.

15.5 Program Requirements

M.Eng. in Civil Engineering
Candidates may satisfy the requirements for the M.Eng. degree in Civil Engineering by following either the Thesis Option or the Project Option.

Both programs require 45 credits and the detailed requirements are given hereafter.

These programs normally require that course work credits be earned at the 500 and 600 level. However, at least two courses must be taken at the 600 level. The minimum course requirements for both options pertain to well prepared students; others may be required to take additional courses as a condition of acceptance or as determined in consultation with their director of studies or research.

A minimum of three terms of resident study at McGill are required for the degree. This residency requirement can also be satisfied by Project Option students through part-time (evening) studies over a period of three or more years.

M.Eng. in Civil Engineering (Thesis) (45 credits)
Required Course (1 credit)
CIVE 662 (1) Masters Research Seminar

Complementary Courses (minimum 17 credits)
A minimum of five courses at the 500 or 600 level, with at least 8 credits at the 600 level

Thesis (27 credits)
The thesis describing the candidate's research is to be submitted in accordance with the regulations of Graduate and Postdoctoral Studies.

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

M.Eng. in Civil Engineering (Project) (45 credits)
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

Project (5 - 15 credits)
Credit for the project may vary between 5 to 15, depending on the amount of work involved.

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

Master of Engineering (Environmental Engineering Option)
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.

M.Eng. in Civil Engineering (Project) – Environmental Engineering Option/Concentration (45 credits)

Required Courses (6 credits)
- CIVE 615 (3) Environmental Engineering Seminar
- CHEN 591 (3) Environmental Bioremediation

Complementary Courses (24 - 39 credits)
A minimum of 22 credits from the following:

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

Toxicology
- OCCH 505 (3) Health Risks of Toxicants
- or OCCH 612 (3) Principles of Toxicology

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

Air Pollution Engineering
- MECH 534 (3) Air Pollution Engineering
- or approved graduate-level alternative

Soil and Water Quality Management
- BREE 533 (3) Water Quality Management
- or CIVE 686 (4) Site Remediation

Environmental Impact
- GEOG 501 (3) Modelling Environmental Systems
- or GEOG 551 (3) Environmental Decisions
- or approved graduate-level alternative

Environmental Policy
- URBP 506 (3) Environmental Policy and Planning
- or approved graduate-level alternative

Elective Courses
Also, 0 to 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.

Project (0 or 5 - 15 credits)
The program may include a project, or, with departmental approval, may be completed with courses only.
- 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

M.Sc.
Candidates with a bachelor's degree in a discipline other than Engineering, such as Science or Arts, may be accepted into a 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 requirements.

M.Sc. (Thesis) in Civil Engineering (45 credits)

Required Course (1 credit)
- CIVE 662 (1) Masters Research Seminar

Complementary Courses (minimum 17 credits)
A minimum of five courses at the 500 or 600 level, with at least 8 credits at the 600 level

Thesis (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

Ph.D.
Candidates normally register for the M.Eng. degree (Thesis Option), or M.Sc. degree in the first instance. Those who have a master's degree acceptable to the Department may, however, be considered for direct registration for the Ph.D. degree (Ph.D.II).

The Ph.D. program consists of a research project and courses as required to develop the candidate's background. Candidates are expected to take a comprehensive preliminary oral examination (course CIVE 701) within the first 18 months of their Ph.D. registration. They must fulfill the requirements outlined in the General Information section of the Graduate and Postdoctoral Studies Calendar. There is no foreign language requirement.

Direct transfer into the Ph.D. program (fast-tracking) may be available for master’s students who have demonstrated a superior academic performance in their undergraduate and master’s studies.

15.6 Courses

Students preparing to register should consult Class Schedule on the web at www.mcgill.ca/student-records/register/class-schedule for the most up-to-date list of courses available; courses may have been added, rescheduled or cancelled after this Calendar was published. Class Schedule lists courses by term and includes days, times, locations, and names of instructors.

CIVE 512 ADVANCED CIVIL ENGINEERING MATERIALS. (3) (3-3-3) (Prerequisite: CIVE 202) Production, structure and properties of engineering materials; ferrous alloys, treatments, welding, special steels, cast iron; ceramic materials; polymers; composite materials; concrete, admixtures, structure, creep, shrinkage; asphalt and asphaltic materials; clay materials and bricks; impact of environment on material response, durability, quality assessment and control, industrial specifications; recent advances.

CIVE 519 SUSTAINABLE DEVELOPMENT PLANS. (6) (1-9-8) (Restriction: Must be enrolled in the Barbados Field Study Semester.) Geared for solving real-world environmental problems related to water at the local, regional and international scale in Barbados. Projects to be designed by instructors in consultation with university, government and NGO partners and to be conducted by teams of 2 to 4 students in collaboration with them.

CIVE 527 RENOVATION AND PRESERVATION: INFRASTRUCTURE. (3) (3-2-4) (Prerequisite: Undergraduate): CIVE 202 and CIVE 318) Maintenance, rehabilitation, renovation and preservation of infrastructure; infrastructure degradation mechanisms; mechanical, chemical and biological degradation; corrosion of steel; condition surveys and evaluation of buildings and bridges; repair and preservation materials, techniques and strategies; codes and guidelines; case studies.

CIVE 540 URBAN TRANSPORTATION PLANNING. (3) (3-1-5) (Prerequisite: CIVE 319 or permission of instructor) Process and techniques of urban transportation engineering and planning, including demand analysis framework, data collection procedures, travel demand modelling and forecasting, and cost-effectiveness framework for evaluation of project and system alternatives.
CIVE 546 SELECTED TOPICS IN CIVIL ENGINEERING 1. (3) (3-0-6) (Prerequisite: Undergraduate): Permission of instructor) Special topics related to Civil Engineering will be presented by staff and visiting lecturers.

CIVE 550 WATER RESOURCES MANAGEMENT. (3) (3-0-6) (Prerequisite: Undergraduate): CIVE 323 or equivalent) State-of-the-art water resources management techniques; case studies of their application to Canadian situations; identification of major issues and problem areas; interprovincial and international river basins; implications of development alternatives; institutional arrangements for planning and development of water resources; and, legal and economic aspects.

CIVE 551 ENVIRONMENTAL TRANSPORT PROCESSES. (3) (3-2-4) (Prerequisite: CIVE 225 or Permission of instructor.) Equilibrium partitioning of pollutants in multphase systems, sorption isotherms, diffusive mass transfer, inter-phase mass transfer kinetics, contaminant transport processes in the subsurface porous media and in natural aquatic systems, mass transport in water and wastewater treatment systems.

CIVE 553 STREAM POLLUTION AND CONTROL. (3) (3-2-4) (Prerequisite: Undergraduate): CIVE 225) Water quality standards, physical and chemical pollution, and bacterial contamination of surface waters. Effects of specific types of pollution such as thermal, point and non-point sources. Stream self purification. Effects on lake eutrophication. Pollution surveys and methods of control.


CIVE 572 COMPUTATIONAL HYDRAULICS. (3) (3-0-6) (Prerequisite: CIVE 327 or equivalent) Computation of unsteady flows in open channels; abrupt waves, flood waves, tidal propagations; method of characteristics; mathematical modelling of river and coastal currents.

CIVE 573 HYDRAULIC STRUCTURES. (3) (3-0-6) (Prerequisites: CIVE 323 and CIVE 327) Hydraulic aspects of the theory and design of hydraulic structures. Storage dams, spillways, outlet works, diversion works, drop structures, stone structures, conveyance and control structures, flow measurement and culverts.

CIVE 574 FLUID MECHANICS OF WATER POLLUTION. (3) (3-0-6) (Prerequisite: CIVE 327 or equivalent.) Mixing, dilution and dispersion of pollutants discharged into lakes, rivers, estuaries and oceans; salinity intrusion in estuaries and its effects on dispersion; biochemical oxygen demand and dissolved oxygen as water quality indicators; thermal pollution; oil pollution.

CIVE 577 RIVER ENGINEERING. (3) (3-0-6) (Prerequisite: CIVE 428 or permission of the instructor) (Corequisite: Graduate) CIVE 428) Fluvial geomorphology; sediment properties; river turbulence; mechanics of the entrainment, transportation and deposition of solids by fluids; threshold of movement; bed forms; suspended load, bed load and total load equations; stable channel design and regime rivers; river modelling; river engineering and river management.

CIVE 585 GROUNDWATER HYDROLOGY. (3) (3-0-6) (Prerequisite: Permission of instructor) Groundwater geology, steady-state and transient-state regional groundwater; infiltration and recharge; hydrological cycle; chemical constituents; adsorption/desorption processes; groundwater exploration techniques; pumping tests; groundwater pollution; diffusion and dispersion; thermal processes; groundwater resource management.


CIVE 602 FINITE ELEMENT ANALYSIS. (4) (3-0-6) (Prerequisites: Undergraduate) Development of displacement-based simple and high order, one, two and three dimensional elements for linear elastic stress analysis. Variational and other methods for element formulation. Plate bending and shell elements. Finite element programming. Use of package programs in static analysis of structures.

CIVE 603 STRUCTURAL DYNAMICS. (4) Dynamic loads on structures; equations of motion of linear single- and multiple-degree-of-freedom systems and of continuous systems; free and forced vibrations; damping in structures; modal superposition and time-history analysis; earthquake effects; provisions of the National Building Code of Canada for seismic analysis.


CIVE 607 ADVANCED DESIGN IN STEEL. (4) Design and behaviour of cold formed and hot rolled structural steel members and systems. Lateral load resistance design of steel roof diaphragms, flexural design of composite slabs, bracing requirements and design procedures for steel structures, floor vibration, member torsion, slender members and design procedures for low rise steel frame buildings.

CIVE 609 RISK ENGINEERING. (4) Quantitative analysis of uncertainty in planning, design, construction, operation and rehabilitation of engineered facilities. Interprets fundamentals of probabilities, random processes, statistics, and decision analysis in the context of engineering applications, in particular description of variability of loads and environmental conditions, material properties, performance prediction, system reliability analysis, and risk-based decision analysis.

CIVE 610 SPECIAL TOPICS IN STRUCTURAL MECHANICS. (4) Special topics in structural mechanics.

CIVE 612 EARTHQUAKE-RESISTANT DESIGN. (4) Static and dynamic analyses, design codes, effects of local ground conditions, ductility demands on structural components. Inelastic behaviour of beams, columns, joints, shear walls and bracing under cyclic loading of steel concrete and masonry structures. Design applications.

CIVE 614 COMPOSITES FOR CONSTRUCTION. (4) Fibre reinforced plastics (FRP), civil engineering applications; fibre, matrix, processing; ply mechanics, strength, rigidity, stability, durability; FRP rebars and tendons for concrete, laminates for strengthening, pultruded beams and columns, FRP stay-in-place formwork for concrete, FRP - glulam beams; design criteria, design project.

CIVE 615 ENVIRONMENTAL ENGINEERING SEMINAR. (3) The course will expose the students to various environmental engineering issues. Lectures will be given by faculty and invited speakers from industry. Each student is required to prepare a written technical paper and make oral presentation.

CIVE 617 DESIGN AND RATING OF HIGHWAY AND RAILWAY BRIDGES. (4) Criteria for bridge design, evaluation and rehabilitation; analysis of super-structures; design and construction of steel and concrete bridges; introduction to cable-stayed and suspension bridges; deck joints and bearings; rating, repair and rehabilitation of bridges.

CIVE 618 DESIGN IN CONCRETE 1. (4) Concrete physical properties, creep, shrinkage; review of ultimate strength design; combined loadings; design of frames and flat plates; limit design, yield line theory; prestressed concrete, partial prestressing and load balancing. The course will include group projects.
CIVE 623 DURABILITY OF MATERIALS. (4) Durability related deterioration mechanisms relevant to construction materials, including concrete, masonry, steel, wood and fibre reinforced composites. Considers factors affecting durability, service life prediction, diagnosis, maintenance, remediation and protective measures. Introduces relevant standards, specifications, guides and design codes.

CIVE 624 DURABILITY OF STRUCTURES. (4) Basic concepts, safety, durability, repair and strengthening; reliability analysis; deterioration mechanisms, preventive and corrective measures; design for durability; seismic structures; bridges; steel, timber and masonry structures; municipal infrastructure; strengthening and retrofitting; management systems; case studies. This course will involve field trips and group design exercises.

CIVE 628 DESIGN OF WOOD STRUCTURES. (4) Review of wood material properties, grades, and design of sawn lumber and timber tension, bending and compression members. Design of connections. Glulam, engineered wood products and systems, shear-walls and diaphragms. Combined loading design, vibration design, moisture and humidity effects, deterioration and protection, fire performance, prescriptive design versus engineering design.

CIVE 630 THESIS RESEARCH 1. (3)
CIVE 631 THESIS RESEARCH 2. (3)
CIVE 632 THESIS RESEARCH 3. (3)
CIVE 633 THESIS RESEARCH 4. (6)
CIVE 634 THESIS RESEARCH 5. (6)
CIVE 635 THESIS RESEARCH 6. (6)
CIVE 648 SPECIAL TOPICS IN CIVIL ENGINEERING. (4) Special topics of an advanced nature relating to Civil Engineering will be presented by staff and visiting lecturers.

CIVE 651 THEORY: WATER / WASTEWATER TREATMENT. (4) Theoretical aspects of the chemistry of water and wastewater treatment. This will include acid-base and solubility equilibria; redox reactions; reaction kinetics; reactor design; surface and colloid chemistry; gas transfer; mass transfer; stabilization and softening; disinfection; corrosion.

CIVE 652 BIOLOGICAL TREATMENT: WASTEWATERS. (4) Process kinetics and reactors. Population kinetics of microorganisms and their role in the various waste treatment processes. Unit processes for wastewater treatment, such as suspended-growth, attached-growth processes, sludge treatment, and nutrient removal. Biological treatment techniques for groundwater decontamination. Laboratory pilot plant exercises.

CIVE 656 CHEMICAL AND PHYSICAL TREATMENT OF WATERS. (4) Theory and design of specific processes used for the physical and/or chemical purification of waters and wastewaters, including mixing, flocculation, sedimentation, flotation, filtration, disinfection, adsorption, ion exchange, aeration, membrane processes, distillation, removal of specific inorganics and organics, taste and odour control, process control, sludge treatment. Laboratory exercises will complement theoretical aspects.

CIVE 662 MASTERS RESEARCH SEMINAR. (1) (Restriction: For civil engineering students in the final semester of the thesis masters program.) Oral presentation of research topics.

CIVE 678 GRAVITY CURRENTS. (4) Internal hydraulics of one-layer and two-layers systems. Boussinesq's approximation, concepts of specific energy and specific force, upstream and downstream influences. Waves, instabilities and turbulence in continuous stratified flows; the flux, gradient and local Richardson numbers. Turbulent mixing and entrainment across gravity and turbulent interfaces. Turbulent thermal, turbulent plumes and related mixing phenomena.


CIVE 686 SITE REMEDIATION. (4) Field investigations; geotechnical and geophysical techniques; hydrogeological conditions; risk assessment; contaminant transport; remedial action plan; containment systems (gas, surface water, and ground water); on-site and off-site treatment techniques (solidification, stabilization, landflling, and soil washing); in-situ treatment techniques (physical, biological, and chemical).

CIVE 691 RESEARCH PROJECT 1. (1)
CIVE 692 RESEARCH PROJECT 2. (2)
CIVE 693 RESEARCH PROJECT 3. (3)
CIVE 694 RESEARCH PROJECT 4. (4)
CIVE 695 RESEARCH PROJECT 5. (5)
CIVE 696 RESEARCH PROJECT 6. (6)
CIVE 697 RESEARCH PROJECT 7. (7)
CIVE 701 PH.D. COMPREHENSIVE PRELIMINARY ORAL EXAM. (0)

16 Classics

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Telephone: 514-398-3977
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Email: graduate.history@mcgill.ca
Website: www.mcgill.ca/classics

Director — Hans Beck

16.1 Staff

Professors
Hans Beck, Director of Classical Studies; Ph.D.(Eriangen) (John MacNaughton Professor of Classics)

Assistant Professor
Michael Fronda; B.A.(C’nell), M.A., Ph.D.(Ohio St.)
Charles W. Gladhill; B.A.(Mich.), M.A.(Georgia South.), Ph.D.(Stan.)

Visiting Assistant Professor
Nikolaos Pouloupolous; Ph.D.(Harv.) (Papachristidis Assistant Professor in Modern Greek Studies)

Faculty Lecturer
Donald W. Baronowski; B.A.(McG.), M.A.(Br. Col.), Ph.D.(Tor.)
Margaret Palczynski; B.Sc.(McG.), M.A.(C’dia)

16.2 Programs Offered

M.A. with Thesis (45 credits over 4 terms, in 18 or 24 months)
M.A. Non-Thesis option (48 credits over 3 or 4 terms, in 18 months) (not offered in 2009-2010)
Ph.D. (not offered in 2009-2010)
16.3 Admission Requirements

M.A. Program
Candidates are required to have a B.A. Honours in Classics or equivalent.

Ph.D. Program
Candidates are required to have a McGill M.A. in Classics or equivalent.

16.4 Application Procedures

Dates for Guaranteed Consideration
For dates for guaranteed consideration, please consult the following website: www.mcgill.ca/gradapplicants/programs. Then select the appropriate program.

Note: We are not willing to consider any applications to be admitted for the Winter/Summer term including Special/Exchange/Visiting students.

16.5 Program Requirements

Please consult the Department for detailed regulations.

M.A. with thesis
1) Course work: 18 credits
2) Thesis: 27 credits
   CLAS 696 – Methods (6)
   CLAS 697 – Proposal (6)
   CLAS 698 – Preparation (15)

M.A. Non-Thesis option
(not offered in 2009-2010)
1) Course work: 24 credits
2) Special subjects: 12 credits
   (CLAS 685D1/CLAS 685D2, CLAS 686D1/CLAS 686D2)
3) Research papers: 12 credits
   CLAS 681 – Research Paper 1 (3)
   CLAS 682 – Research Paper 2 (3)
   CLAS 683 – Research Paper 3 (3)
   CLAS 684 – Research Paper 4 (3)

Ph.D.
(not offered in 2009-2010)
1) Course work: 24 credits;
2) Reading list;
3) Thesis and Oral Defence.

16.6 Courses

Students preparing to register should consult Class Schedule on the web at www.mcgill.ca/student-records/register/class-schedule for the most up-to-date list of courses available; courses may have been added, rescheduled or cancelled after this Calendar was published. Class Schedule lists courses by term and includes days, times, locations, and names of instructors.

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

CLAS 515D1 (3), CLAS 515D2 (3) LATIN AUTHORS AND TEXTS. (Prerequisite (Undergraduate): 9 credits in Intermediate Latin or equivalent) (Restriction: Honours and Graduate students) (Students must register for both CLAS 515D1 and CLAS 515D2.) (No credit will be given for this course unless both CLAS 515D1 and CLAS 515D2 are successfully completed in consecutive terms) Completion of a Reading List in Latin, with Faculty supervision, to be tested by written examination.

CLAS 612 LATIN LITERATURE 1. (3) Intensive reading of Latin prose in the original language.

CLAS 613 LATIN LITERATURE 2. (3) (Prerequisite: CLAS 612) Intensive reading of Latin poetry in the original language.

CLAS 622 GREEK LITERATURE 1. (3) Intensive reading of Greek prose in the original language.

CLAS 623 GREEK LITERATURE 2. (3) (Prerequisite: CLAS 622) Intensive reading of Greek poetry in the original language.

CLAS 651 ROMAN HISTORY 1. (3) Intensive reading of documents and historiographical texts from the Roman Republican period in the original language.

CLAS 652 ROMAN HISTORY 2. (3) (Prerequisite: CLAS 651) Intensive reading of documents and historiographical texts from the Roman Imperial period in the original language.

CLAS 661 GREEK HISTORY 1. (3) Intensive reading of documents and historiographical texts from the Greek Archaic and Classical periods in the original language.

CLAS 662 GREEK HISTORY 2. (3) (Prerequisite: CLAS 661) Intensive reading of documents and historiographical texts from the Greek Hellenistic and Imperial periods in the original language.

CLAS 676 ANCIENT THOUGHT 1. (3) Intensive reading of ancient Greek and/or Roman philosophical texts in the original language.

CLAS 677 ANCIENT THOUGHT 2. (3) (Prerequisite: CLAS 676) Intensive reading of ancient Greek and/OR Roman philosophical texts in the original language.

CLAS 678 MODERN GREEK 1. (3) Intensive reading of Modern Greek poetry in the original language.

CLAS 679 MODERN GREEK 2. (3) (Prerequisite: CLAS 678) Intensive reading of Modern Greek prose in the original language.

CLAS 696 M.A. THESIS RESEARCH 1. (6) Preparatory work for the writing of an M.A. thesis under the supervision of a faculty member. Production of a commented bibliography.

CLAS 697 M.A. THESIS RESEARCH 2. (6) (Prerequisite: CLAS 696) Completion of preparatory work for the writing of an M.A. thesis under the supervision of a faculty member. Production of a thesis prospectus.

CLAS 698 M.A. THESIS RESEARCH 3. (15) (Prerequisite: CLAS 697) Writing of an M.A. thesis under the supervision of a faculty member.

17 Communication Sciences and Disorders

School of Communication Sciences and Disorders
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Canada
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Email: scsd@mcgill.ca
Website: www.mcgill.ca/scsd

Director — Shari Baum
Research Director — Marc Pell

17.1 Staff

Emeritus Professor
Donald Doehring; B.A.(Buff.), M.A.(N.M.), Ph.D.(Ind.)
Professors
Shari Baum; B.A.(C'nell), M.S.(Vt.), M.A., Ph.D.(Brown)
Athanasios Katsaraks; M.D.(Thess.), M.Sc.(McG.), F.R.C.P.(C)

Associate Professors
Vincent Gracco; B.A., M.A.(San Diego), Ph.D.(Wis.-Madison)
Marc Pell; B.A.(Ott.), M.Sc., Ph.D.(McG.)
Linda Polka; B.A.(Slippery Rock), M.A.(Minn.), Ph.D.(S. Flor.)
Susan Rvachew; B.Sc.(Alta.), M.Sc., Ph.D.(Calg.)
Elin Thordardottir; B.A., M.Sc., Ph.D.(Wis.-Madison)

Assistant Professors
Laura Gonnerman; B.A.(Boston), M.A.(Middlebury), Ph.D.(USC)
Aparna Nadig; B.A.(Reed), M.S., Ph.D.(Brown)
Karsten Steinhaeuser; M.Sc., Ph.D.(Dr.reterat) (Free Univ., Berlin)

Assistant Professors (Part-Time)
Gabriel Leonard; B.A.(Dublin), D.A.P., M.Sc., Ph.D.(McG.)
Rosalee Shenker; B.Sc.(Syr.), M.A.(Calif. St.), Ph.D.(McG.)

Faculty Lecturer
Jeanne Claessen; M.A.(Reading), Dip. Clinical Communication Studies(City University, London)

Faculty Lecturers (Part-Time)
Abdulalaim Al-Haidary; B.Sc.(King Saud U.), M.Sc.A.(McG.)
Francoise Brossseau-Lapre; B.A., M.Sc.A.(McG.)
Pi-Yu Chiang; B.A., M.A.(Taiwan)
Catherine Dench; B.Sc.(Lond.), M.Sc.(W. Ont.)
Ruth Gesser; B.A.(C'dia), M.Sc.A.(McG.)
James Lapointe; B.A., M.Sc.A.(McG.)
Mahchid Namazi; B.Sc., M.Sc.(Br. Col.)
Darla Orchard; B.A., M.Sc.(McG.)
Judith Robillard-Shultz; B.A., M.Sc.A.(McG.)
Colleen Timm; B.A.(C'dia), M.Sc.A.(McG.)
Patricia Viens; ASLTA Certificate(Rochester I.T.), ASL Workshop Certificate(Vista U.)
Anne Vogt; B.Ed., B.A.(Tel Aviv)
Joanne Wilding; B.A., M.Sc.A.(McG.)

Associate Members
Eva Kehayia (Physical and Occupational Therapy)
Yuriko Oshima-Takane (Psychology)

Adjunct Members
Howard Cherowitz (Jewish Gen.), Rachel Mayberry (U.C.S.D.),
David McFarland (Montr.), Martha Crago (Dal.)

17.3 Admission Requirements

M.Sc. (Applied)
An applicant must hold an undergraduate degree with a minimum B average (3.0 on a 4.0 point scale) or better in areas relevant to the selected field of specialization. Specific requirements are six credits in statistics, a total of 18 credits across the disciplines of psychology and linguistics (with a minimum of six credits in each discipline). Knowledge of physiology is also desirable.

M.Sc. in Communication Sciences and Disorders
The M.Sc. provides research training for:
1. students who are also taking courses for professional qualification;
2. students who have a non-thesis professional degree in Communication Sciences and Disorders; and
3. students with degrees in related fields who wish to do research but not obtain professional qualification in Communication Sciences and Disorders.

Ph.D. in Communication Sciences and Disorders
Applicants should normally have a master's degree with thesis or its equivalent in Communication Sciences and Disorders or a related field (e.g., psychology, linguistics). Students who possess an appropriate bachelor's degree or master's degree without thesis will also be considered for the Ph.D. program, but, if admitted, must first complete a qualifying year of coursework and a research project.
17.4 Application Procedures

Please see the School of Communication Sciences and Disorders website at www.mcgill.ca/scsd/programs/application for required application materials.

Dates for Guaranteed Consideration

For dates for guaranteed consideration, please consult the following website: www.mcgill.ca/gradapplicants/programs. Then select the appropriate program.

The School of Communication Sciences and Disorders will only consider applications upon receipt of the following documentation by the dates for guaranteed consideration:

- Online application;
- Information Form;
- Prerequisite Form;
- Personal Statement;
- Two letters of recommendation;
- Two official copies of transcripts from all universities attended.

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 (anglophone or francophone), must submit documented proof of

prior to admission: the Test of English as a Foreign Language (TOEFL) with a minimum score of 587 (paper-based) or 240 (computer-based), or 95 on the internet-based test with minimum component scores of 24 in both Speaking and Writing and 21 in both Reading and Listening, or the International English Language Testing System (IELTS) with a minimum overall band score of 7.0.

M.Sc. (Thesis) and Ph.D. programs

All applications received by the dates for guaranteed consideration are automatically considered for any internal funding or awards made available to the department for recruitment purposes. Students who apply for Fall admission generally have the most options with respect to applying for external funding as well as for being considered for internal support.

Applications will be considered upon receipt of supporting documents as outlined above. All applicants are strongly encouraged to submit reports of their performance on the Graduate Record Examination (GRE).

17.5 Program Requirements

M.Sc. (Applied) in Communication Sciences and Disorders – Speech-Language Pathology Option/Concentration

The professional degree program involves two academic years of full-time study and related practical work followed by a Summer internship.

Year 1 Required Courses (31 credits)

Fall
SCSD 616 (3) Audiology
SCSD 617 (3) Anatomy and Physiology of Speech and Hearing
SCSD 619 (3) Phonological Development
SCSD 624 (3) Language Processes
SCSD 633 (3) Language Development
SCSD 681 (1) Practicum and Seminar 1

Winter
SCSD 631 (3) Speech Science
SCSD 632 (3) Phonological Disorders: Children
SCSD 637 (3) Developmental Language Disorders 1
SCSD 638 (3) Neurolinguistics
SCSD 682 (1) Practicum and Seminar 2

Summer
SCSD 646 (2) Introductory Clinical Practicum

Year 1 Complementary Course (3 credits)

One 3-credit seminar option must be taken.

Year 2 Required Courses (31 credits)

Fall
SCSD 618 (3) Research and Measurement Methodologies
SCSD 636 (3) Fluency Disorders
SCSD 639 (3) Voice Disorders
SCSD 643 (3) Developmental Language Disorders 2
SCSD 644 (3) Applied Neurolinguistics
SCSD 683 (1) Practicum and Seminar 3

Winter
SCSD 609 (3) Neuromotor Disorders
SCSD 642 (3) Aural Rehabilitation
SCSD 669 (3) ASD and Neurodevelopmental Disorders
SCSD 680 (3) Deglutition and Dysphagia
SCSD 684 (1) Practicum and Seminar 4

Summer
SCSD 679 (2) Advanced Clinical Practicum

Year 2 Complementary Course (3 credits)

One 3-credit seminar option must be taken.

M.Sc. (Applied) Complementary Course List

SCSD 634 (3) Research and Measurement Methodologies 2
SCSD 664 (3) Communication Sciences and Disorders 1
SCSD 666 (3) Communication Sciences and Disorders 3
SCSD 667 (3) Communication Sciences and Disorders 4
SCSD 670 (3) Communication Sciences and Disorders 2
SCSD 678 (3) Special Topics 4

A seminar may also be taken outside of the School upon approval of a faculty advisor.

M.Sc. in Communication Sciences and Disorders (45 credits)

M.Sc. candidates must complete at least 45 credits, including a minimum of 24 and a maximum of 39 credits for thesis research, and a minimum of 6 credits in other courses. The non-thesis credits can be special topic courses in the School and/or courses in other departments, as arranged with the student's thesis supervisor.

Complementary Courses (21 credits)

6 - 21 credits chosen from:
SCSD 675 (12) Special Topics 1
SCSD 676 (9) Special Topics 2
SCSD 677 (6) Special Topics 3
SCSD 678 (3) Special Topics 4
or courses in other departments, as arranged with the student's thesis supervisor.

0 - 15 credits chosen from:
SCSD 673 (12) M.Sc. Thesis 3
SCSD 674 (3) M.Sc. Thesis 4

The Thesis Component – Required (24 credits)

SCSD 671 (12) M.Sc. Thesis 1
SCSD 672 (12) M.Sc. Thesis 2

Ph.D. in Communication Sciences and Disorders

Ph.D. students must complete a full graduate course in statistics and both advanced research seminars as well as the other course requirements in their individual program of study, and pass a comprehensive examination. Students entering the Ph.D. program through the fast-track option must additionally demonstrate the ability to complete a research project (SCSD 685 and SCSD 686) and related coursework during the initial year. An examination in a foreign language is not required.
Required Courses (6 credits)
SCSD 652 (3) Advanced Research Seminar 1
SCSD 653 (3) Advanced Research Seminar 2
SCSD 685 (3) Research Project 1
SCSD 686 (3) Research Project 2
SCSD 701 (0) Doctoral Comprehensive

Complementary Courses (minimum 6 credits)
6 credits of graduate-level statistics from courses such as:
EDPE 676, EDPE 682, EDPE 684, EPIB 621, EPIB 622,
PSYC 650, PSYC 651;
students who
have taken an equivalent course in statistics, or are currently
required to
have taken an equivalent course in statistics, or are currently
taking an equivalent course in statistics, or are currently
taking an equivalent course as part of their Ph.D. program
requirements, will be deemed to have satisfied this requirement
for the Language Acquisition Option.

Any other course requirements specified for the student's indi-
vidual program of study.

Ph.D. in Communication Sciences and Disorders – Language
Acquisition Option/Concentration
Students must satisfy all program requirements for the Ph.D. in
their home department. The Ph.D. thesis must be on a topic relat-
ing to language acquisition, approved by the LAP committee.

Required Courses (14 credits)
EDSL 620 (3) Language Acquisition Issues 3
LING 710 (2) Language Acquisition Issues 2
PSYC 709 (2) Language Acquisition Issues 1
SCSD 652 (3) Advanced Research Seminar 1
SCSD 653 (3) Advanced Research Seminar 2
SCSD 712 (2) Language Acquisition Issues 4
SCSD 701 (0) Doctoral Comprehensive

Complementary Courses (9 credits)
3 credits of graduate-level statistics from courses such as:
EDPE 676, EDPE 682, PSYC 650, PSYC 651; students who
have taken an equivalent course in statistics, or are currently
taking an equivalent course as part of their Ph.D. program
requirements, will be deemed to have satisfied this requirement
for the Language Acquisition Option.

At least 6 credits, two courses, selected from the following list.
One of these two courses must be from outside Communication
Sciences and Disorders.
EDSL 620 (3) Critical Issues in Second Language Education
EDSL 623 (3) Second Language Learning
EDSL 624 (3) Educational Sociolinguistics
EDSL 627 (3) Classroom-Centred Second Language Research
EDSL 629 (3) Second Language Assessment
EDSL 632 (3) Second Language Literacy Development
EDSL 664 (3) Second Language Research Methods
LING 555 (3) Language Acquisition 2
LING 590 (3) Language Acquisition and Breakdown
LING 651 (3) Topics in Acquisition of Phonology
LING 655 (3) Theory of L2 Acquisition
LING 755 (3) Advanced Seminar: Language Acquisition
PSYC 581 (3) Methods: Developmental Psycholinguistics
PSYC 734 (3) Developmental Psychology and Language
PSYC 735 (3) Developmental Psychology and Language
PSYC 736 (3) Developmental Psychology and Language
PSYC 737 (3) Developmental Psychology and Language
SCSD 619 (3) Phonological Development
SCSD 632 (3) Phonological Disorders: Children
SCSD 633 (3) Language Development
SCSD 637 (3) Developmental Language Disorders 1
SCSD 643 (3) Developmental Language Disorders 2

17.6 Courses
Students preparing to register should consult Class Schedule
on the web at www.mcgill.ca/student-records/register/
class-schedule for the most up-to-date list of courses avail-
able; courses may have been added, rescheduled or cancelled
after this Calendar was published. Class Schedule lists
courses by term and includes days, times, locations, and
names of instructors.

The course credit weight is given in parentheses after the title.
SCSD 609 NEUROMOTOR DISORDERS. (3) The focus of this course
will be on the assessment and management of motor speech dis-
orders, associated with both acquired and developmental neuro-
motor disorders, and swallowing disorders (of both neuromotor
and structural origin).

SCSD 616 AUDIOLOGY. (3) Basic diagnostic and rehabilitative pro-
dcedures, goals and procedures used in clinical audiology, and
the psychoacoustic theories on which they are based will be pre-

SCSD 617 ANATOMY AND PHYSIOLOGY: SPEECH AND HEARING. (3)
The anatomy and physiology of speech and hearing mechanisms
will be covered. Topics will include neuroanatomy, the anatomy
and physiology of the head, neck and upper torso, and the exter-
nal, middle, and inner ear.

SCSD 618 RESEARCH AND MEASUREMENT METHODOLOGIES 1. (3)
Methodologies used in research and measurement in the field of
communication sciences and disorders will be introduced. Topics
covered include: the nature and interpretation of test norms; valid-
ity; interpretation of test score differences; and questionnaire
development (scaling). Tests currently used in speech-language
pathology and audiology are examined.

SCSD 619 PHONOLOGICAL DEVELOPMENT. (3) Theories and
research related to normal and abnormal phonological develop-
ment in children will be studied.

SCSD 624 LANGUAGE PROCESSES. (3) Survey of themes and
methods from psycholinguistics: how humans perceive, process,
and produce language. Following levels of linguistic description,
study progresses from the building blocks of phonemes and mor-

SCSD 631 SPEECH SCIENCE. (3) The acoustic analysis and per-
ception of speech and related pathologies will be presented. The-
ories and models of speech production, speech motor control, and
speech perception will be considered.

SCSD 632 PHONOLOGICAL DISORDERS: CHILDREN. (3) The nature
of phonological disorders and clinical approaches for their remedi-
ation in children will be presented.

SCSD 633 LANGUAGE DEVELOPMENT. (3) Theories of language
acquisition, prerequisites to language development, and current
issues in research will be studied. Topics include the role of input,
individual differences in acquisition, and language socialization.

SCSD 634 RESEARCH AND MEASUREMENT METHODS 2. (3) This
course addresses the strengths and weaknesses of various
research designs. Issues concerning the analysis and interpreta-
tion of research results also will be discussed.

SCSD 636 FLUENCY DISORDERS. (3) The nature of stuttering, vari-
ous causal theories, and techniques for evaluation and treatment
of children and adults will be presented.

SCSD 637 DEVELOPMENTAL LANGUAGE DISORDERS 1. (3) The
nature of developmental language disorders and the assessment
of language competence and performance in both speaking and
non-speaking children will be studied.

SCSD 638 NEUROLINGUISTICS. (3) Current theories of language-
brain relationships and speech and language deficits subsequent
to brain damage will be studied. A review of current research on
phonetic, lexical, and syntactic processing in brain-damaged indi-
viduals is included.

SCSD 639 VOICE DISORDERS. (3) Information about the vocal
mechanism, its pathologies, and methods of evaluation and treat-
ment will be studied.

SCSD 642 AURAL REHABILITATION. (3) This course addresses the
effects of hearing impairment in adults as well as in the develop-
ing child with attention to problems in speech, language, and cognitive
function as well as social-emotional adjustment. Various intervention approaches are examined.

SCSD 643 DEVELOPMENTAL LANGUAGE DISORDERS 2. (3) Major theories of language disorders are translated into intervention principles used in language treatment programs. Adaptations of intervention techniques to suit specific disorders (including augmentative communication) will be explored.

SCSD 644 APPLIED NEUROLINGUISTICS. (3) Various classificatory systems and appropriate assessment and remediation principles for brain-damaged individuals will be covered. Theoretical and clinical issues relevant to treatment of aphasic, neuromotor, and memory disorders will be considered.

SCSD 646 INTRODUCTORY CLINICAL PRACTICUM. (2) This course provides an introduction to professional practice through intensive exposure to a variety of clinical populations.

SCSD 652 ADVANCED RESEARCH SEMINAR 1. (3) (This course may be taken as an advanced course for M.Sc. students.) Proseminar in which current research topics in communication disorders will be discussed.

SCSD 653 ADVANCED RESEARCH SEMINAR 2. (3) (This course may be taken as an advanced course for M.Sc. students.) Proseminar in which current research topics in communication disorders will be discussed.

SCSD 664 COMMUNICATION SCIENCES AND DISORDERS 1. (3) Current research and professional issues in communication sciences and disorders will be discussed. Specific topics to be selected yearly.

SCSD 666 COMMUNICATION SCIENCES AND DISORDERS 3. (3) Current research and professional issues in communication sciences and disorders will be discussed. Specific topics to be selected yearly.

SCSD 667 COMMUNICATION SCIENCES AND DISORDERS 4. (3) Current research and professional issues in communication sciences and disorders will be discussed. Specific topics to be selected yearly.


SCSD 670 COMMUNICATION SCIENCES AND DISORDERS 2. (3) Current research and professional issues in communication sciences and disorders will be discussed. Specific topics to be selected yearly.

SCSD 671 M.Sc. Thesis 1. (12)
SCSD 671D1 (6), SCSD 671D2 (6) M.Sc. Thesis 1. (Students must register for both SCSD 671D1 and SCSD 671D2) (No credit will be given for this course unless both SCSD 671D1 and SCSD 671D2 are successfully completed in consecutive terms) (SCSD 671D1 and SCSD 671D2 together are equivalent to SCSD 671)

SCSD 671N1 M.Sc. Thesis 1. (6) (Students must also register for SCSD 671N2) (No credit will be given for this course unless both SCSD 671N1 and SCSD 671N2 are successfully completed in a twelve month period) (SCSD 671N1 and SCSD 671N2 together are equivalent to SCSD 671)

SCSD 672N1 M.Sc. Thesis 1. (6) (Prerequisite: SCSD 671N1) (No credit will be given for this course unless both SCSD 671N1 and SCSD 671N2 are successfully completed in a twelve month period) (SCSD 671N1 and SCSD 671N2 together are equivalent to SCSD 671) See SCSD 671N1 for course description.

SCSD 672 M.Sc. Thesis 2. (12)
SCSD 672D1 (6), SCSD 672D2 (6) M.Sc. Thesis 2. (Students must register for both SCSD 672D1 and SCSD 672D2) (No credit will be given for this course unless both SCSD 672D1 and SCSD 672D2 are successfully completed in consecutive terms) (SCSD 672D1 and SCSD 672D2 together are equivalent to SCSD 672)

SCSD 672N1 M.Sc. Thesis 2. (6) (Students must also register for SCSD 672N2) (No credit will be given for this course unless both SCSD 672N1 and SCSD 672N2 are successfully completed in a twelve month period) (SCSD 672N1 and SCSD 672N2 together are equivalent to SCSD 672)

SCSD 672N2 M.Sc. Thesis 2. (6) (Prerequisite: SCSD 672N1) (No credit will be given for this course unless both SCSD 672N1 and SCSD 672N2 are successfully completed in a twelve month period) (SCSD 672N1 and SCSD 672N2 together are equivalent to SCSD 672) See SCSD 672N1 for course description.

SCSD 673 M.Sc. Thesis 3. (12)
SCSD 678 SPECIAL TOPICS 4. (3)

SCSD 679 ADVANCED CLINICAL PRACTICUM. (2) This course enhances professional practice independence through intensive exposure to a variety of clinical populations.

SCSD 680 DEGULLITION AND DYSPHAGIA. (3) Advanced physiology and neurophysiology of mastication and deglutition, including normal function and diagnosis and treatment of swallowing disorders.

SCSD 681 PRACTICUM AND SEMINAR 1. (1) Course provides initial practicum experiences including a combination of the following: speech/language and hearing screenings, facility tours, short term placements and laboratory assignments.

SCSD 682 PRACTICUM AND SEMINAR 2. (1) This course provides clinical experience through short-term placements and screenings, as well as discussions of current practicum issues.

SCSD 683 PRACTICUM AND SEMINAR 3. (1) Professional practice experiences focusing on a variety of clinical populations are provided. Discussion of advanced issues in clinical practice is included.

SCSD 684 PRACTICUM AND SEMINAR 4. (1) This course provides clinical practicum experiences in a range of settings. Professional practice issues are considered.

SCSD 685 RESEARCH PROJECT 1. (3) Supervised research project.

SCSD 686 RESEARCH PROJECT 2. (3) Supervised research project.

SCSD 701 DOCTORAL COMPREHENSIVE. (0)
SCSD 701D1 (0), SCSD 701D2 (0) DOCTORAL COMPREHENSIVE. (Students must register for both SCSD 701D1 and SCSD 701D2) (No credit will be given for this course unless both SCSD 701D1 and SCSD 701D2 are successfully completed in consecutive terms) (SCSD 701D1 and SCSD 701D2 together are equivalent to SCSD 701)

SCSD 712 LANGUAGE ACQUISITION ISSUES 4. (2)
18.2 Programs Offered

The Communication Studies Program offers courses and directs project research in preparation for the M.A. Thesis and Ph.D. in Communication Studies.

The Program is concerned with the study of communications phenomena through interdisciplinary activity that includes both theoretical and practical considerations of the various modes and media of communication. The Program does not provide the purely technical training which can be more appropriately carried out by institutions of technology and communication arts, rather the focus is on broadening the understanding of the interplay between practical needs and theoretical perspectives. The special theoretical interest of the Program centres on the nature and scope of human communications as they emphasize the relationship of cognitive, social and aesthetic problems.

For more information on the Program, please visit our website www.mcgill.ca/ahcs.

To obtain funding information please consult Graduate and Postdoctoral Studies, McGill University, James Administration Building, Room 400, 845 Sherbrooke Street West, Montreal, Quebec, H3A 2T5. Telephone: 514-398-3990. Website: www.mcgill.ca/gps.

For programs in Art History and Communication Studies refer to our website: www.mcgill.ca/ahcs.

18.3 Admission Requirements

M.A.

An Honours bachelor's degree or equivalent is required of applicants for the M.A. program with a minimum CGPA of 3.3 out of 4.0 or the equivalent, i.e., B+ (75%), is required. In any case, the transcript must show breadth or depth in related areas of study.

Ph.D.

Applicants for the Ph.D. program are expected to have completed the equivalent of an M.A. degree. Admission will be based on academic achievement and evidence of talent and strong motivation in Communication Studies.

18.4 Application Procedures

Dates for Guaranteed Consideration

For dates for guaranteed consideration, please consult the following website: www.mcgill.ca/gradapplicants/apply. Then select the appropriate program.

Note: We are not willing to consider any applications to be admitted for the Winter/Spring term.

Applications will be considered upon receipt of:

1. Completed and signed application form.
2. A non-refundable application fee of $100 Canadian must accompany each application (including McGill students), otherwise it cannot be considered. This sum must be remitted using one of the following methods:
   a. Credit card (by completing the appropriate section of the application form).
   b. Certified cheque in CAD currency drawn on a Canadian bank.
   c. Certified cheque in USD currency drawn on a U.S. bank.
   d. Canadian Money Order in CAD currency.
   e. U.S. Money Order in USD currency.
   f. An international draft in Canadian funds drawn on a Canadian bank requested from the applicant's bank in his/her own country.
3. Two official copies of all transcripts are required for admission. Transcripts written in a language other than English or French must be accompanied by a certified translation. An explanation of the grading system used by the applicant’s university is essential. It is the applicant’s responsibility to arrange for transcripts to be sent. Documents submitted will not be returned. It is desirable to submit a list of the titles of courses taken in the major subject, since transcripts often give code numbers only.
4. Two letters of recommendation on letterhead or bearing the university seal and with original signatures from two instructors familiar with the applicant’s work, preferable in the applicant’s area of specialization, are required. It is the applicant’s responsibility to arrange for these letters to be sent.
5. 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 completing the TOEFL exams (minimum score 550 on the paper-based test, 213 on the computer-based test, or 86 on the internet-based test, with each component score not less than 20). Results must be submitted as part of the application.
6. Statement of interest of at least 500 words addressing the student’s interest in Communication and the proposed area of research.
7. Two examples of written work.
8. Proof of citizenship (certified photocopy of passport, birth certificate or equivalent).

Inquiries regarding the Program should be addressed to the Graduate Administrative Coordinator, Department of Art History and Communication Studies. McGill’s online application form for graduate program candidates is available at www.mcgill.ca/gradapplicants/apply.

18.5 Program Requirements

The master's program consists of a three-term program of courses outlined below and the fulfillment of a French language requirement.

M.A. in Communication Studies (Thesis) (45 credits)

The M.A. in Communication Studies offers advanced training in the critical, historical and theoretical analysis of communication in culture, communication technology and communication policy. M.A. students pursue coursework and write an M.A. thesis that reflects sustained analysis of a topic in Communication Studies. The M.A. degree is academic in character, and does not include professional training in media production.

Professor:

Marc Raboy; B.Sc., M.A., Ph.D.(McG.)
Christine Ross; M.A.(C'dia), Ph.D.(Paris I)
Will Straw; B.A.(Car.), M.A., Ph.D.(McG.)

Associate Professors:

Darin Barney; B.A., M.A.(S. Fraser), Ph.D.(Tor.)
David Crowley; B.A.(Johns H.), M.Sc.(Penn.), Ph.D.(McG.)
Charmaine Nelson; B.F.A., M.A.(C'dia), Ph.D.(Manc.)
Jonathan Sterne; B.A.(Minn.), A.M., Ph.D.(Ill.-Urbana-Champaign)
Angela Vanhaelen; B.A.(W. Ont.), M.A., Ph.D.(Br. Col.)

Assistant Professors:

Jenny Burnman; B.A.(C'dia), M.A., Ph.D.(York (Can.))
Mary Hunter; B.A.(Qu.), M.A., Ph.D.(Lond.)
Robert G. Lentz; B.A.(Arkansas), M.A.(Chic.), Ph.D.(Texas-Austin)
Hajime Nakatani; B.L.A.(Tokyo), M.A.(Lond.), Ph.D.(Chic.)
Carrie Rentschler; B.A.(Minn.), M.A., Ph.D.(Ill.-Urbana-Champaign)
Richard Taws; B.A., M.A., Ph.D.(Lond.)

Adjunct Professors:

Johanne Lamoureux, Cornelius Borck, Charles Levin, Bronwen Wilson
**COMMUNICATION STUDIES**

**Required Courses** (27 credits)
- COMS 616 (3) Staff-Student Colloquium
- COMS 692 (6) M.A. Thesis Preparation 1
- COMS 693 (6) M.A. Thesis Preparation 2
- COMS 694 (6) M.A. Thesis Preparation 3
- COMS 695 (6) M.A. Thesis Preparation 4

**Complementary Courses** (18 credits)
- 18 credits of 500-level or higher COMS courses; 2 courses outside COMS require approval of the Graduate Program Director.

**Language Requirement**
Reading competency in French as a second language as per the Language Requirements – Master's Degrees, section 4.1.4 found under the heading Program Requirements, section 4 in the “General Information, Regulations and Research Guidelines” of the Graduate Calendar.

**M.A. in Communication Studies (Thesis) – Gender and Women’s Studies Option/Concentration** (45 credits)
The graduate option in Gender and Women’s Studies is an interdisciplinary program for students who meet the degree requirements in Communication Studies who wish to earn 6 credits of approved coursework focusing on gender and women’s studies, and issues in feminist research and methods. The thesis must be on a topic centrally related to gender and/or women’s studies.

**Required Courses** (6 credits)
- COMS 616 (3) Staff-Student Colloquium
- WMST 601 (3) Feminist Theories and Methods

**Complementary Courses** (15 credits)
- 12 complementary credits must be at the 500 level or higher in Communication Studies.
- 3 credits of complementary coursework must be in Gender and Women’s Studies.
- WMST 602 (3) Feminist Research Symposium

**Thesis Required** (24 credits)
- COMS 692 (6) M.A. Thesis Preparation 1
- COMS 693 (6) M.A. Thesis Preparation 2
- COMS 694 (6) M.A. Thesis Preparation 3
- COMS 695 (6) M.A. Thesis Preparation 4

**Language Requirement**
Reading competency in French as a second language as per the Language Requirements – Master’s Degrees, see section 4.1.4 found under the heading Program Requirements, section 4 in the “General Information, Regulations and Research Guidelines” of the Graduate Calendar.

**M.A. in Communication Studies (Non-Thesis) (48 credits)**

**Required Courses** (15 credits)
- COMS 611 (3) History/Theory/Technology
- COMS 613 (3) Gender and Technology
- COMS 616 (3) Staff-Student Colloquium
- COMS 617 (3) Staff-Student Colloquium
- COMS 619 (3) Material Culture & Communications

**Complementary Courses** (21 credits)
- 6 credits, two history of communication courses chosen from:
  - COMS 521 (3) Communications in History
  - COMS 623 (3) Information Design
  - COMS 625 (3) Media Policy
  - COMS 629 (3) Canadian Cultural Communications Policy
- 6 credits, two community and gender in communication courses chosen from:
  - COMS 631 (3) Discourse Analysis
  - COMS 633 (3) Feminist Media Studies
  - COMS 637 (3) Historiography of Communications

**COMS 639 (3) Interpretive Methods in Media**
6 credits, two media studies and technology courses chosen from:
- COMS 541 (3) Cultural Industries
- COMS 643 (3) Cultural Studies of News
- COMS 646 (3) Popular Media
- COMS 649 (3) Audience Analysis
- WMST 601 (3) Feminist Theories and Methods
- WMST 602 (3) Feminist Research Symposium

**Project Component – Required** (12 credits)
- COMS 696 (6) Research Project 1
- COMS 697 (6) Research Project 2

**Ph.D. Degree in Communication Studies**
Candidates with an M.A. degree will be admitted at the Ph.D. 2 level, thereby gaining credit for one year of resident study. When admitted at Ph.D. 2 level, two years of residence are required for the doctoral degree.

The Ph.D. in Communication Studies offers in-depth training in the critical, historical and theoretical analysis of communication in culture, communication technology and communication policy. Doctoral students pursue coursework, submit a comprehensive exam and thesis proposal, with the goal of writing a dissertation that makes an original contribution to knowledge in Communication Studies. The Ph.D. degree is academic in character, and does not include professional training in media production.

**Required Courses** (3 credits)
- COMS 616 (3) Staff-Student Colloquium
- COMS 702 (0) Comprehensive Exam
- COMS 703 (0) Dissertation Proposal

**Complementary Courses** (15 credits)
- 15 credits of 500-level or higher COMS courses; 1 course outside COMS requires approval of the Graduate Program Director.

**Language Requirement**
Competence in French as a second language as per the Language Requirements – Doctoral, see section 4.2.3 found under the heading Program Requirements, section 4 in the “General Information, Regulations and Research Guidelines” of the Graduate Calendar.

**Ph.D. Degree in Communication Studies – Gender and Women’s Studies Option/Concentration**
Candidates with an M.A. degree will be admitted at the Ph.D. 2 level, thereby gaining credit for one year of resident study. When admitted at Ph.D. 2 level, two years of residence are required for the doctoral degree.

The graduate option in Gender and Women’s Studies is an interdisciplinary program for students who meet the degree requirements in Communication Studies who wish to earn 9 credits of approved coursework focusing on gender and women’s studies, and issues in feminist research and methods. The student’s doctoral thesis must be on a topic centrally relating to issues of gender and/or women’s studies.

**Required Courses** (9 credits)
- COMS 616 (3) Staff-Student Colloquium
- COMS 702 (0) Comprehensive Exam
- COMS 703 (0) Dissertation Proposal
- WMST 601 (3) Feminist Theories and Methods
- WMST 602 (3) Feminist Research Symposium

**Complementary Courses** (9 credits)
- 9 credits of 500-level or higher courses which must include one 3-credit course on gender/women’s issues at the graduate level (may be in the department or outside).
Language Requirement

Competence in French as a second language as per the Language Requirements – Doctoral, see section 4.2.3 found under the heading Program Requirements, section 4 in the “General Information, Regulations and Research Guidelines” of the Graduate Calendar.

18.6 Courses

Students preparing to register should consult Class Schedule on the web at www.mcgill.ca/student-records/register/class-schedule for the most up-to-date list of courses available; courses may have been added, rescheduled or cancelled after this Calendar was published. Class Schedule lists courses by term and includes days, times, locations, and names of instructors.

Students may also consult the Department website (www.mcgill.ca/ahcs) for information.

For course inquiries, please contact the Department.

Note: All undergraduate courses administered by the Faculty of Arts (courses at the 100 to 500 level) have limited enrolment.

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

COMS 510 CANADIAN BROADCASTING POLICY. (3) (Course intended for senior undergraduates and graduate students with a specialized interest in Canadian broadcasting policy.) (Prerequisites: 3 credits of COMS coursework at the 200 level, 3 credits of COMS coursework at the 300 or 400 level, or permission of instructor.) Key issues in the history and evolution of radio, television and new media in Canada. The legislative and regulatory framework of Canadian broadcasting, the relationship between public and privately-owned media, the emergence of new media, and the efforts of interest groups to influence the direction of the Canadian media system.

COMS 521 COMMUNICATIONS IN HISTORY. (3) North American communication studies have undergone five discernible changes in the definition and focus of the field. The major “schools” of thought to be covered are the Chicago and Lazarsfeld heritages, the institutionalization of communication science in the academy, and the post-modern period.

COMS 541 CULTURAL INDUSTRIES. (3) The convergence of computerized technologies and cultural industries and how these have produced entire new forms of cultural expression in film, TV, and the Internet.

COMS 560 COMMUNICATIONS AND DEVELOPMENT. (3)

COMS 611 HISTORY/Theory/Technology. (3) A critical appraisal of current issues in the field of communications notably through an examination of how new theorists have dealt with the effects and consequences of developments in the technologies of communication. The contributions of Canadian media theorists figure significantly in the seminar’s concerns.

COMS 613 GENDER AND TECHNOLOGY. (3) Contemporary culture and media in Canada and Quebec since 1945, with special emphasis on the ‘70s.

COMS 616 STAFF-STUDENT COLLOQUIUM 1. (3) Pro-Seminar in Communications. A required course for all new M.A. and Ph.D. students. The Pro-Seminar is designed to explore theoretical and methodological issues in Communications through a series of presentations by the faculty and other McGill associates.

COMS 617 STAFF-STUDENT COLLOQUIUM 2. (3) A required course for all new M.A. and Ph.D. students. The Pro-Seminar is designed to explore theoretical and methodological issues in Communications through a series of presentations by the faculty and other McGill associates.

COMS 619 MATERIAL CULTURE & COMMUNICATIONS. (3) Approaches to the analysis of material artefacts of “things” and their place within communications. Anthropological, economic and aesthetic analysis of objects, with particular emphasis on the capacity of artefacts to carry and store meaning.

COMS 623 INFORMATION DESIGN. (3) Examination of the basic concepts and methodologies in the design of information.

COMS 625 MEDIA POLICY. (3) The political, economic, social and cultural processes that shape national media systems.

COMS 629 CANADIAN CULTURAL COMMUNICATIONS POLICY. (3) An advanced seminar in history and theory of Canadian cultural and communications policy in the context of rapidly changing technological environments.

COMS 630 READINGS IN COMMUNICATIONS RESEARCH 1. (3)

COMS 631 TEXTUAL ANALYSIS OF MEDIA. (3) An examination of tools and methods for the analysis of media texts, including methodological traditions of semiotics, structuralism, classical film theory and discourse analysis, as well as with critiques directed at these traditions.

COMS 633 FEMINIST MEDIA STUDIES. (3) Examination of cross-disciplinary approaches to critical media study undertaken by feminist, gender and queer studies scholars.

COMS 637 HISTORIOGRAPHY OF COMMUNICATIONS. (3) Surveys recent writings in the history of media and communication; explores theoretical and methodological problems of writing media history.

COMS 639 INTERPRETIVE METHODS IN MEDIA. (3) A study of the various modes of interpreting and understanding the products of the mass media and of other human communication events.

COMS 641 PROPAGANDA. (3)

COMS 643 CULTURAL STUDIES OF NEWS. (3) Examines how cultural studies scholars approach news, including news as a popular textual system, news as the ritual construction of national identity and its role in nation-building projects, the urban circulation of news, journalism as an interpretive culture, alternative press cultures, and the commoditization of news spectacles.

COMS 646 POPULAR MEDIA. (3) An assessment of popular culture and the research strategies employed; an examination of semiotics, critical theory, literary criticism, psychoanalysis, and cultural studies. Case studies from several of the following areas will be critiqued: fashion, music, advertising sub-cultural codes and behaviour, soap operas, visual art and cult films.

COMS 649 AUDIENCE ANALYSIS. (3) Advanced theoretical and empirical work on audience analysis from the perspective of recent research in mass communications.

COMS 655 MEDIA AND THE SENSES. (3) Media as interfaces between human senses and the surrounding world, including the relationship of media and sensory experience from cultural, technological, political and philosophical perspectives.

COMS 670D1 (1.5), COMS 670D2 (1.5) FILM STUDIES SEMINAR. (Students must register for both ENGC 670D1 and ENGC 670D2) (No credit will be given for this course unless both ENGC 670D1 and ENGC 670D2 are successfully completed in consecutive terms)

COMS 692 M.A. THESIS PREPARATION 1. (6)

COMS 693 M.A. THESIS PREPARATION 2. (6)

COMS 694 M.A. THESIS PREPARATION 3. (6)

COMS 695 M.A. THESIS PREPARATION 4. (6)

COMS 696 RESEARCH PROJECT 1. (6)

COMS 697 RESEARCH PROJECT 2. (6)

COMS 702 COMPREHENSIVE EXAMINATION. (0) Comprehensive examination as per departmental procedure.

COMS 703 DISSERTATION PROPOSAL. (0) Preparation of a dissertation research proposal.

COMS 704 COMPREHENSIVE EXAMINATION PART 3. (6)

COMS 705 COMPREHENSIVE EXAMINATION PART 4. (6)

COMS 730 READINGS IN COMMUNICATIONS RESEARCH 2. (3)
19 Computer Science

School of Computer Science
McConnell Engineering, Room 318
3480 University Street
Montreal, QC H3A 2A7
Canada

Telephone: 514-398-7071 ext. 00074
Fax: 514-398-3883
Email: grad.cs@mcgill.ca
Website: www.cs.mcgill.ca

Director — Gregory Dudek

Graduate Program Directors:
M.Sc. – M. Blanchette
Ph.D. – X.-W. Chang

19.1 Staff

Emeritus Professor
C. Paige; B.Sc., B.Eng.(Syd.), Ph.D.(Lond.)
G.T. Toussaint; B.Sc.(Tulsa), Ph.D.(Br. Col.)

Associate Professors
B. Pientka; B.Sc., M.Sc.(Tech. U. of Darmstadt, Germany),
M. Maheswaran; B.Sc.(U. Peradeniya), M.Sc., Ph.D.(Purdue)

Professors
D. Avis; B.Sc.(Wat.), Ph.D.(Stan.)
L. Devroye; M.Sc.(Louvain), Ph.D.(Texas) (James McGill Professor)
G. Dudek; B.Sc.(Qu.), M.Sc., Ph.D.(Tor.) (James McGill Professor)
L. Hendren; B.Sc., M.Sc.(Qu.), Ph.D.(C’nell)
B. Hanen; B.Sc., M.Sc.(Mun) (Canada Research Chair)
K. Siddiqi; B.Sc.(Lafayette), M.Sc., Ph.D.(Brown) (William Dawson Chair)

Associate Professors
M. Blanchette; B.Sc., M.Sc.(Montr.), Ph.D.(Wat.) (James McGill Professor)
X.W. Chang; B.Sc., M.Sc.(Nanjing), Ph.D.(McG)
C. Crépeau; B.Sc., M.Sc.(Montr.), Ph.D.(MIT)
N. Friedman; B.A.(W. Ont.), Ph.D.(Tor.)
M.T. Hallett; B.Sc.(Qu.), Ph.D.(Vic. (BC))
P. Hayden; B.Sc.(McG), Ph.D.(Oxt.)
B. Kemme; B.Sc., M.Sc.(U. of Erlangen-Nuremberg, Germany),
Ph.D.(ETH, Zurich)
J. Kienzle; Eng.Dip., Ph.D.(Swiss Fed. IT)
M. Langer; B.Sc.(McG), M.Sc.(Montr.), Ph.D.(McG)
M. Maheswaran; B.Sc.(U. Peradeniya), M.Sc., Ph.D.(Purdue)
B. Plint; B.Sc., M.Sc.(Tech. U. of Darmstadt, Germany),
Ph.D.(Carn. Mell) (on leave 2009-2010)
D. Precup; B.Sc.(Tech. U. of Cluj-Napoca), M.Sc., Ph.D.(Mass.)
J. Pineau; B.Sc.(Wat.), M.Sc., Ph.D.(Carn. Mell) (on leave 2009-2010)
C. Tropper; B.Sc.(McG), Ph.D.(Br. Col.)
A. Vetta; B.Sc., M.Sc.(LSE), Ph.D.(MIT) (on leave 2009-2010)

Assistant Professors
K. Siddiqi; B.Sc.(Wat.), M.Sc., Ph.D.(Br. Col.)
B. Reed; B.Sc., Ph.D.(McG)
M. Robillard; B.Eng.(École Poly., Montr.), M.Sc., Ph.D.(Br. Col.)
J. Pineau; B.Sc.(Wat.), M.Sc., Ph.D.(Carn. Mell) (on leave 2009-2010)
D. Ruths; B.Sc., M.Sc., Ph.D.(Rice)
M. Singh; B.Sc., M.Sc.(IIT), Ph.D., ACO(CMU)
J. Waldispuhl; B.Sc.(Nice & Sophia-Antipolis), M.Sc.(Paris VII),
Ph.D.(École Poly., France)

Faculty Lecturer
J. Vybiral; B.Sc., M.Sc.(McG)

Associate Members
R. Shultz (Psychology)
R. Sengupta (Geography)
B. Shepherd (Mathematics & Statistics)
T.R. Shultz (Psychology)

Adjunct Professors
S. Brands, R. De Mori, P.J. Mosterman, T. Perkins, I. Rekleitis,
G.O. Sabidussi, P. Tesson

19.2 Programs Offered

Master’s in Computer Science (Thesis Option), including the Computational Science and Engineering (CSE) option and the Bioinformatics option.

Master’s in Computer Science (Project Option).

Ph.D. in Computer Science, including a Bioinformatics option.

19.3 Admission Requirements

Master’s (M.Sc.)

The minimum requirement for admission is a bachelor's degree (CGPA 3.2 or better, or equivalent) with the course work in Computer Science indicated in the brochure “Information for Applicants to Graduate Programs”.

The brochure supplements information in this Calendar and should be consulted by all graduate students.

Ph.D.

In order to apply to the Ph.D. program, normally applicants should hold an M.Sc. degree in Computer Science or a closely related area, from a well-recognized university. Students who hold a B.Sc. degree in Computer Science but have an exceptionally strong academic record may be admitted directly to the Ph.D. program, but they must initially apply to the M.Sc. program. Students who are in the M.Sc. program have the option to be fast-tracked into the Ph.D. program at the end of their first academic year contingent on excellent performance as judged by the Ph.D. committee.

19.4 Application Procedures

Applications will be considered upon receipt of:
1. application form;
2. original or certified copies of transcripts;
3. two letters of reference;
4. test results (GRE, TOEFL).

For dates for guaranteed consideration, please consult the following website: www.mcgill.ca/gradapplicants/programs. Then select the appropriate program.

Application documents are also available at our website, www.cs.mcgill.ca/academic/prospectivestudents/applying/applying.

McGill’s online application form for graduate program candidates is available at www.mcgill.ca/gradapplicants/apply.

Deadline: January 1st if applicant wishes to be considered for scholarship awards.

Dates for Guaranteed Consideration

For dates for guaranteed consideration, please consult the following website: www.mcgill.ca/gradapplicants/programs. Then select the appropriate program.

Application documents are also available at our website, www.cs.mcgill.ca/academic/prospectivestudents/applying/applying.

McGill’s online application form for graduate program candidates is available at www.mcgill.ca/gradapplicants/apply.

Deadline: January 1st if applicant wishes to be considered for scholarship awards.
19.5 Program Requirements

MASTER'S

The M.Sc. program is offered with either a thesis or a project. The M.Sc. Thesis (49 credits, 50 credits if the multidisciplinary Computational Science and Engineering option is selected) requires six 500-, 600- or 700-level courses and a thesis; the M.Sc. Thesis (Bioinformatics option) (49 credits) requires courses in Bioinformatics as well as courses in Computer Science at the 500, 600, or 700 level and a thesis; the M.Sc. Project (Non-Thesis) is 46 credits, requiring nine 500-, 600- or 700-level courses and a project. Courses will be chosen with guidance from an academic adviser, subject to approval by the School.

M.Sc. in Computer Science (Thesis) (49 credits)

Required Course (4 credits)
COMP 601 (4) Special Topics in Computer Science

Complementary Courses (minimum 21 credits)
six 500-, 600-, or 700-level COMP courses

Thesis Component – Required (24 credits)
COMP 698 (9) Thesis Research 1
COMP 699 (15) Thesis Research 2

M.Sc. in Computer Science (Thesis) – Computational Science and Engineering Option/Concentration (50 credits)

Required Courses (5 credits)
COMP 601 (4) Special Topics in Computer Science
COMP 669D1/D2D1 (3) CSE Seminar

Complementary Courses (minimum 21 credits)
Two courses from List A, two courses from List B, and the remaining credits to be chosen from graduate (500-, 600- or 700-level) courses in the School of Computer Science. Two complementary courses must be taken outside the School of Computer Science.

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 514 (3) Structural Mechanics
CIVE 572 (3) Computational Hydraulics
CIVE 603 (4) Structural Dynamics
CIVE 613 (4) Numerical Methods: Structural Engineering
COMP 505 (3) Advanced Computer Architecture
COMP 557 (3) Fundamentals of Computer Graphics
COMP 558 (3) Fundamentals of Computer Vision
COMP 567 (3) Discrete Optimization 2
COMP 621 (4) Optimizing Compilers
COMP 642 (4) Numerical Estimation Methods
COMP 767 (3) Advanced Topics: Applications 1
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 651 (4) Asymptotic Expansion and Perturbation Methods

MATH 761 (4) Topics in Applied Math 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 545 (3) Advanced Stress Analysis
MECH 572 (3) Introduction to Robotics
MECH 573 (3) Mechanics of Robotic Systems
MECH 576 (3) Computer Graphics and Geometrical Modelling
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) Heat Transfer
MECH 654 (4) Compt. Fluid Flow and Heat Transfer

Thesis Component – Required (24 credits)
COMP 698 (9) Thesis Research 1
COMP 699 (15) Thesis Research 2

M.Sc. in Computer Science – Bioinformatics Option/Concentration (49 credits)

Required Courses (7 credits)
COMP 601 (4) Special Topics in Computer Science
COMP 616 (3) Bioinformatics Seminar

Complementary Courses (18 credits)
6 credits from the following courses:
BINF 621 (3) Bioinformatics: Molecular Biology
BMDE 652 (3) Bioinformatics: Proteomics
BTEC 555 (3) Structural Bioinformatics
COMP 618 (3) Bioinformatics: Functional Genomics
PHGY 603 (3) Systems Biology and Biophysics

Three 4-credit courses chosen from 500-, 600-, or 700-level Computer Science courses in consultation with the candidate's supervisor.

Thesis Component - Required (24 credits)
COMP 698 (9) Thesis Research 1
COMP 699 (15) Thesis Research 2

M.Sc. in Computer Science (Project/Non-Thesis) (46 credits)

Required Course (4 credits)
COMP 601 (4) Special Topics in Computer Science

Complementary Courses (minimum 30 credits)
nine 500-, 600- or 700-level COMP courses

Project Component – Required (12 credits)
COMP 694 (6) Research Project 1
COMP 695 (6) Research Project 2

Ph.D.

All students must consult the graduate program website www.cs.mcgill.ca, where up-to-date information about the graduate program is posted. Any questions concerning the program should be addressed to the Graduate Coordinator.

Required coursework: Students must take eight graduate courses, of which at least five are computer science courses. These courses should be chosen by the student in consultation with the supervisor (or co-supervisor) and the Progress Committee.

Conditional on approval by the Ph.D. Committee, courses taken during a master's program can count towards the requirement, but at least two computer science graduate courses must be taken in the Ph.D. program and at least two graduate courses must be taken in the first year of the Ph.D. program. Upon arrival at McGill, a student wishing to obtain a course reduction must submit a request, with approval from his or her supervisor (or co-supervisors), to the Ph.D. Committee.

To meet the breadth requirement, at least two complementary courses must be taken from each of the two categories. This course breadth requirement is waived for any student who has a bachelor's degree in computer science.
Ph.D. in Computer Science

Required Courses (4 credits)
COMP 766 (4) Advanced Topics Application 1
COMP 776 (4) Advanced Topics: Applications 2

* Each year, the Ph.D. Committee will determine which category COMP 598 and COMP 599 belong to according to the subjects taught in those courses.

In accordance with University regulations, the successful completion of the Ph.D. program also includes the following:

- A comprehensive examination, COMP 700, taken by the beginning of the second year. This examination is described in further detail below.
- A written research proposal and an oral examination, COMP 701, approved by the thesis proposal examination committee. This is termed the Ph.D. proposal and area examination and is described in further detail below.
- A written thesis displaying original scholarship and written in good literary style. The thesis must be a distinct contribution to knowledge in the chosen field.
- A thesis oral defense.

Progress Committee and Progress Report

Upon arrival at McGill a new Ph.D. student must, in consultation with his or her supervisor or supervisors, form a Progress Committee. This Committee will consist of three professors who will monitor the student’s progress in the course of the Ph.D. program. At least two of these professors must be from the School of Computer Science, one of which will be the student's thesis supervisor.

Ph.D. Comprehensive Examination - COMP 700 (3 credits)

This examination must be taken at the beginning of the second year in the program. A student must register for COMP 700 the semester in which the exam will take place. The student is required to complete a Progress Report Form and submit it to the Evaluation Committee at least two weeks before the evaluation meeting takes place. The Evaluation Committee is formed by the Ph.D. Committee and the supervisor (or co-supervisors). The evaluation meeting has two parts. During the first part, the student meets with the evaluation committee to verbally discuss the content of the progress report, and in particular answer questions pertaining to the literature review (note that students are expected to know fundamentals related to what they present in the literature review). In the case of co-supervision, two co-supervisors share a unit of question time. During the second part, the committee meets (without the student) to discuss the student's performance (for the course component, a GPA of B+ or better is expected) and assign a grade of either pass or fail, which is decided by majority vote (in the case of a tie, the student fails). Four Ph.D. Committee members (decided by the Chair of the Ph.D. Committee) and the supervisor are voters (in the case of co-supervision, each co-supervisor gets .5 vote). In the event of a failure, the student must retake the examination in the coming January or September, whichever is closer. In case of a second failure, the student will be required to withdraw from the program.

Ph.D. Thesis Proposal and Area Examination - COMP 701 (3 credits)

Before the end of Ph.D. 3, students must take and pass the Ph.D. Proposal and Area Examination. This exam has course number COMP 701. The student must register for this course the term in which the exam will take place. This exam is a public, oral exam designed to test the research ability of the student in the area of the thesis as well as depth of knowledge in those areas of computer science closely related to the thesis topic. The exam consists of a 20-page (maximum) written report, single-spaced in 12 point font, to be submitted to the Graduate Coordinator at least two weeks before the exam, and an oral presentation by the candidate lasting no more than 20 minutes. The outcome of this exam is either a Pass or a Fail. In the event of a Fail, the student may be given a single chance to retake the examination. If it is a second fail in the program, the student will be asked to withdraw.
COMP 701 may not be treated like COMP 700, which falls under the Comprehensive Policy.

**Ph.D. in Computer Science – Bioinformatics**

Option/Concentration

**Required Courses** (6 credits)

- COMP 616 (3) Bioinformatics Seminar
- COMP 700 (0) Ph.D. Comprehensive Examination
- COMP 701 (3) Thesis Proposal and Area Examination

In addition: a yearly progress report and a Ph.D. and Oral defense

**Complementary Courses** (6 credits)

6 credits from the following courses:

- BINF 621 (3) Bioinformatics: Molecular Biology
- BMDE 652 (3) Bioinformatics: Proteomics
- BTEC 555 (3) Structural Bioinformatics
- COMP 618 (3) Bioinformatics: Functional Genomics
- PHGY 603 (3) Systems Biology and Biophysics

Additional courses at the 500, 600, or 700 level may be required at the discretion of the candidate’s supervisory committee. Students who have completed the M.Sc.-level option in Bioinformatics must complete 6 credits of complementary courses not taken in the master’s program.

**19.6 Courses**

Students preparing to register should consult Class Schedule on the web at www.mcgill.ca/student-records/register/class-schedule for the most up-to-date list of courses available; courses may have been added, rescheduled or cancelled after this Calendar was published. Class Schedule lists courses by term and includes days, times, locations, and names of instructors.

Term(s) offered (Fall, Winter, Summer) may appear after the credit weight to indicate when a course would normally be taught. Please check Class Schedule to confirm this information.

**Note:** All undergraduate courses administered by the Faculty of Science (courses at the 100 to 500 level) have limited enrolment.

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

**COMP 506 ADVANCED ANALYSIS OF ALGORITHMS.** (3) (3 hours) (Prerequisite: COMP 330 or COMP 360 or COMP 431.) The study of computational complexity and intractability: Cook’s Theorem. NP-completeness, oracles, the polynomial hierarchy, lower bounds, heuristics, approximation problems.

**COMP 507 COMPUTATIONAL GEOMETRY.** (3) (3 hours) (Prerequisite: COMP 360 or COMP 362 or permission of instructor or corequisite COMP 506.) Problems in computational geometry; worst-case complexity of geometric algorithms; expected complexity of geometric algorithms and geometric probability; geometric intersection problems; nearest neighbour searching; point inclusion problems; distance between sets; diameter and convex hull of a set; polygon decomposition; the Voronoi diagram and other planar graphs; updating and deleting from geometric structures.

**COMP 512 DISTRIBUTED SYSTEMS.** (4) (Prerequisites: COMP 310, COMP 251 or equivalent.) Models and Architectures. Application-oriented communication paradigms (e.g. remote method invocation, group communication). Naming services. Synchronization (e.g. mutual exclusion, concurrency control). Fault-tolerance (e.g. process and replication, agreement protocols). Distributed file systems. Security. Examples of distributed systems (e.g. Web, CORBA). Advanced Topics.

**COMP 520 COMPILER DESIGN.** (4) (3 hours, 1 hour consultation) (Prerequisites: COMP 273 and COMP 302) The structure of a compiler. Lexical analysis. Parsing techniques. Syntax directed translation. Run-time implementation of various programming language constructs. Introduction to code generation for an idealized machine. Students will implement parts of a compiler.

**COMP 521 MODERN COMPUTER GAMES.** (4) (Prerequisite: COMP 303 or COMP 361.) (Corequisite: COMP 557.) Genre and history of games, basic game design, storytelling and narrative analysis, game engines, design of virtual worlds, real-time 2D graphics, game physics and physical simulation, pathfinding and game AI, content generation, 3D game concerns, multiplayer and distributed games, social issues.

**COMP 522 MODELLING AND SIMULATION.** (4) (3 hours) (Prerequisites: COMP 251, COMP 302, COMP 350) Simulation and modeling processes, state automata, Petri Nets, state charts, discrete event systems, continuous-time models, hybrid models, system dynamics and object-oriented modelling.

**COMP 523 LANGUAGE-BASED SECURITY.** (3) (Prerequisites: COMP 302, COMP 330.) State-of-the-art language-based techniques for enforcing security policies in distributed computing environments. Static techniques (such as type- and proof-checking technology), verification of security policies and applications such as proof-carrying code, certifying compilers, and proof-carrying authentication.

**COMP 524 THEORETICAL FOUNDATIONS OF PROGRAMMING LANGUAGES.** (3) (3 hours) (Prerequisites: COMP 302 and COMP 330.) Operational and denotational semantics of programming languages. Equivalence theorems for first-order languages. Lambda calculus. Type-inference, typed lambda calculus. Polymorphism. Elements of domain theory and fixed-point induction.

**COMP 525 FORMAL VERIFICATION.** (3) (3 hours) (Prerequisites: COMP 251 and COMP 330.) Propositional logic - syntax and semantics, temporal logic, other modal logics, model checking, symbolic model checking, binary decision diagrams, other approaches to formal verification.

**COMP 526 PROBABILISTIC REASONING AND AI.** (3) (3 hours) (Prerequisites: COMP 206, COMP 360, COMP 424 and MATH 323) Belief networks, Utility theory, Markov Decision Processes and Learning Algorithms.

**COMP 529 SOFTWARE ARCHITECTURE.** (4) (Prerequisite: COMP 303 or COMP 304.) Development, analysis, and maintenance of software architectures, with special focus on modular decomposition and reverse engineering.


**COMP 533 OBJECT-ORIENTED SOFTWARE DEVELOPMENT.** (3) (Prerequisites: COMP 335 or ECSE 321) Object-oriented, UML-based software development; requirements engineering based on use cases; using OCL and a coherent subset of UML to establish complete and precise analysis and design documents for a software system; Java-specific mapping strategies for implementation.

**COMP 535 COMPUTER NETWORKS 1.** (3) (3 hours) (Prerequisite: COMP 310) (Restriction: Students may not take both COMP 435 and COMP 535 for credit) Exposition of the first four layers of the ISO model for computer network protocols, i.e., the physical, data, network, and transport layers. Basic hardware and software issues with examples drawn from existing networks, notably SNA, DECnet, and ARPANet.

**COMP 537 INTERNET PROGRAMMING.** (3) (3 hours) (Prerequisites: COMP 251 and COMP 302, and any one of COMP 310, COMP 420, COMP 424, or COMP 433) Sockets, User Datagram Protocol (UDP), Transmission utility protocols; Remote Terminal Protocol (Telnet), Simple Mail Transfer Protocol (SMTP), File Transfer Protocol (FTP), Hypertext Transfer Protocol (HTTP), Internet resource database and search engines. Remote File Systems. Distributed objects, Common Object Request Broker Architecture (CORBA).
COMP 540 MATH, MATH 327 or COMP 350: Designing and programming reliable numerical algorithms. Stability of algorithms and condition of problems. Reliable and efficient algorithms for solution of equations, linear least squares problems, the singular value decomposition, the eigenproblem and related problems. Perturbation analysis of problems. Algorithms for structured matrices.

COMP 547 CRYPTOGRAPHY AND DATA SECURITY. (4) (3 hours) (Prerequisites: COMP 360 or COMP 362, MATH 323.) This course presents an in-depth study of modern cryptography and data security. The basic information theoretic and computational properties of classical and modern cryptographic systems are presented, followed by a cryptanalytic examination of several important systems. We will study the applications of cryptography to the security of systems.

COMP 552 COMBINATORIAL OPTIMIZATION. (4) (Prerequisite: Math 350 or COMP 362 (or equivalent).) (Restriction: This course is reserved for undergraduate honours students and graduate students. Not open to students who have taken or are taking MATH 552.) Algorithmic and structural approaches in combinatorial optimization with a focus upon theory and applications. Topics include: polyhedral methods, network optimization, the ellipsoid method, graph algorithms, matroid theory and submodular functions.

COMP 557 FUNDAMENTALS OF COMPUTER GRAPHICS. (3) (3 hours) (Prerequisite: MATH 223, COMP 251, COMP 260) The study of fundamental mathematical, algorithmic and representational issues in computer graphics. The topics to be covered are: overview of graphics process, projective geometry, homogeneous coordinates, projective transformations, quadtrees and tensors, line-drawing, surface modelling and object modelling reflectance models and rendering, texture mapping, polyhedral representations, procedural modelling, and animation.

COMP 558 FUNDAMENTALS OF COMPUTER VISION. (3) (hours) (Prerequisites: COMP 206, COMP 360, MATH 222, MATH 223) (Restriction: not open to students who have taken 308-766 (COMP 766) before January 2001) Biological vision, edge detection, projective geometry and camera modelling, shape from shading and texture, stereo vision, optical flow, motion analysis, object representation, object recognition, graph theoretic methods, high level vision, applications.

COMP 560 GRAPH ALGORITHMS AND APPLICATIONS. (3) (3 hours) (Prerequisite: COMP 360 or COMP 431 or MATH 343) Algorithms for connectivity, partitioning, clustering, colouring and matching. Isomorphism testing. Algorithms for special classes of graphs. Layout and embedding algorithms for graphs and networks.

COMP 563 MOLECULAR EVOLUTION THEORY. (3) (Prerequisites: COMP 251 or COMP 252, MATH 323 or equivalent; or by permission of instructor.) Population genetics; statistical inference from sequence data; phylogenetics, coalescent theory; models of mutation and selection.

COMP 564 COMPUTATIONAL GENETIC REGULATION. (3) (Prerequisite: COMP 462.) This course examines computational problems related to gene regulation at the mRNA and protein levels. With respect to mRNA expression, topics include microarray analysis, SNP detection, and the inference of genetic networks. With respect to protein expression, topics include peptide sequencing, peptide identification, and the interpretation of interaction maps.


COMP 567 DISCRETE OPTIMIZATION 2. (3) (3 hours) (Prerequisites: COMP 566 or MATH 417) Formulation, solution and applications of integer programs. Branch and bound, cutting plane, and column generation algorithms. Combinatorial optimization. Polyhedral methods. A large emphasis will be placed on modelling. Students will select and present a case study of an application of integer programming in an area of their choice.

COMP 575 FUNDAMENTALS OF DISTRIBUTED ALGORITHMS. (3) (3 hours) (Prerequisites: COMP 310) Study of a collection of algorithms that are basic to the world of concurrent programming. Discussion of algorithms from the following areas: termination detection, deadlock detection, global snapshots, clock synchronization, fault tolerance (byzantine and self-stabilizing systems). Students will implement algorithms on the BBN butterfly and will present papers on topics in these areas.

COMP 577 DISTRIBUTED DATABASE SYSTEMS. (3) (3 hours) (Prerequisites: COMP 421 and COMP 310) High-level communication paradigms (e.g. client/server, publish/subscribe). Architecture of distributed information systems. Distributed transactions: concurrency control, recovery, distributed agreement. Data Distribution. Distributed queries. Advanced topics.

COMP 598 TOPICS IN COMPUTER SCIENCE 1. (3) (Prerequisite: Permission of instructor.) Topics in computer science.

COMP 599 TOPICS IN COMPUTER SCIENCE 2. (3) (Prerequisite: Permission of instructor.) Topics in computer science.

COMP 601 SPECIAL TOPICS IN COMPUTER SCIENCE. (4) COMP 601D1 (2), COMP 601D2 (2) SPECIAL TOPICS IN COMPUTER SCIENCE. (2 per term) (Restriction: Computer Science students) (Students must register for both COMP 601D1 and COMP 601D2) (No credit will be given for this course unless both COMP 601D1 and COMP 601D2 are successfully completed in consecutive terms) (COMP 601D1 and COMP 601D2 together are equal to COMP 601.)

COMP 601N1 SPECIAL TOPICS IN COMPUTER SCIENCE. (2) (Students must also register for COMP 601N2) (No credit will be given for this course unless both COMP 601N1 and COMP 601N2 are successfully completed in a twelve month period) (COMP 601N1 and COMP 601N2 together are equal to COMP 601.) See COMP 601N1 for course description.


COMP 612 DATABASE PROGRAMMING PRINCIPLES. (4) (3 hours) Database programming using the relational algebra. Integrates the relational model of databases with principles of high-level programming languages. Includes functional and object-oriented paradigms, logic programming, recursive data structures, sorting, and procedural and data abstraction. Applications to knowledge bases, data mining, semistructured data, Internet DB.

COMP 614 DISTRIBUTED DATA MANAGEMENT. (4) (Prerequisites: COMP 421 and one of COMP 435 or COMP 535 or COMP 512, or equivalent.) Architecture and examples of distributed information systems (e.g., federated databases, component systems, web databases). Data consistency (consistency models, advanced transaction models, advanced concurrency control, distributed recovery). Data replication and caching. Distribution queries, Schema Integration. Advanced Topics.

COMP 616D1 (1.5), COMP 616D2 (1.5). (Restrictions: This seminar is restricted to graduate students in the Bioinformatics Option. Enrolment is limited to 30 students.) (Note: The seminar will meet for 3 hours every second week over fall and winter semesters.) Introduction to current trends in Bioinformatics and closely related fields such as genomics and proteomics.
COMP 616N1 BIOINFORMATICS SEMINAR. (1.5) Introduction to current trends in Bioinformatics and closely related fields such as genomics and proteomics.

COMP 618 BIOINFORMATICS: FUNCTIONAL GENOMICS. (3) (Prerequisite: Enrolment in Bioinformatics Option Program or permission of coordinators.) Techniques related to microarrays (normalization, differential expression, class prediction, class discovery), the analysis of non-coding sequence data (identification of transcription factor binding sites), single nucleotide polymorphisms, the inference of biological networks, and integrative Bioinformatics approaches.

COMP 621 PROGRAM ANALYSIS AND TRANSFORMATIONS. (4) (3 hours) (Prerequisite: COMP 251 or equivalent, COMP 302 or equivalent, COMP 520 is useful but not strictly necessary) Program analysis and transformations are used in optimizing compilers and other automatic tools such as bug-finders, verification tools and software engineering applications. Course topics include the design of intermediate representations, control flow analysis, data flow analysis at both the intra- and inter-procedural level and program transformations for performance improvement.

COMP 623 CONCURRENT PROGRAMMING LANGUAGES. (4) (3 hours) (Prerequisite: COMP 302 or equivalent) The course will include the following topics: deadlock, fairness, liveness and safety properties, distributed protocols, standard concurrent programming problems, a comparative study of concurrent programming paradigms. Additional topics: dataflow programming, concurrent constraint programming, concurrent logic programming, process algebra, fault tolerant distributed systems, parallel object-oriented languages.

COMP 627 THEORETICAL PROGRAMMING LANGUAGES. (4) (3 hours) (Prerequisites: COMP 524 and COMP 530) Programming language semantics. Lambda calculus, the Church Rosser theorem, typed lambda calculus, the strong normalization theorem, polymorphism, type inference, elements of domain theory, models of the lambda calculus, relating operational and denotational semantics, full abstraction. Reasoning about programs. Soundness and relative completeness of program logics.


COMP 646 COMPUTATIONAL PERCEPTION. (4) (3 hours) Seminar course on perception problems from a computer science perspective. Vision problems such as stereo, shading, motion, colour, object recognition. Audition problems such as sonar, source localization, source recognition.

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

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

COMP 649 QUANTUM CRYPTOGRAPHY. (4) (Prerequisite: COMP 547 and permission of the instructor.) (Restriction: An introduction to notions of Information Theory is required.) Review of the basic notions of cryptography and quantum information theory. Quantum key distribution and its proof of security. Quantum encryption, error-correcting codes and authentication. Quantum bit commitment, zero-knowledge and oblivious transfer. Multiparty quantum computations.

COMP 652 MACHINE LEARNING. (4) (Prerequisites: COMP 424, COMP 526 or ECSE 526, COMP 560, MATH 323 or ECSE 305.) An overview of state-of-the-art algorithms used in machine learning, including theoretical properties and practical applications of these algorithms.

COMP 655 DISTRIBUTED SIMULATION. (4) (Prerequisite: COMP 310 or equivalent.) Conservative and optimistic synchronization involved in executing a discrete event simulation on a distributed platform (e.g. cluster of workstations, shared memory multiprocessor). Focus is on efficiency, strengths and limitations of the different approaches. Applications to large simulations (networks, VLSI, virtual environments).

COMP 656 RUN-TIME LANGUAGE SUPPORT. (4) Software and support software for late binding, polymorphic calls and garbage collection in object-oriented languages.

COMP 667 SOFTWARE FAULT TOLERANCE. (4) (Prerequisite: COMP 409 or permission of instructor) Software fault tolerance, concepts and implementation. Failure classification; information and time redundancy; forward and backward error recovery; error confinement; idealized fault-tolerant component; sequential and concurrent systems; exception handling; transactions and atomic actions; voting; design diversity. Case studies.

COMP 669 COMPUTATIONAL SCIENCE ENGINEERING SEMINAR. (1) (Restriction: This seminar course is open only to students who were admitted to the CSE Program Option.) Techniques and applications in computational science and engineering.

COMP 669D1 (0.5), COMP 669D2 (0.5) COMPUTATIONAL SCIENCE ENGINEERING SEMINAR. (Restriction: This seminar course is open only to students who were admitted to the CSE Program Option.) (Students must register for both COMP 669D1 and COMP 669D2.) (No credit will be given for this course unless both COMP 669D1 and COMP 669D2 are successfully completed in consecutive terms.) (COMP 669D1 and COMP 669D2 together are equal to COMP 669.) Techniques and applications in computational science and engineering.


DENTISTRY

20 Dentistry
Faculty of Dentistry
3640 University Street, Room M51
Montreal, QC H3A 2B2
Canada
Telephone: 514-398-7203
Fax: 514-398-2028
Website: www.mcgill.ca/dentistry

Dean, Faculty of Dentistry — P. J. Allison
Associate Dean, Graduate Studies and Research — M. D. McKee
Director, Graduate Studies — S. Tran

Director, Graduate Program in Oral and Maxillofacial Surgery —
M. El-Hakim

20.1 Staff

Professors
P.J. Allison; B.D.S., F.D.S., R.C.S., M.Sc.(Lond.), Ph.D.(McG.)
G. Bennett; B.A.(Rutgers), M.A., Ph.D.(Va.)
M.C. Bushnell; B.A.(Md.), M.A., Ph.D.(Amer.)
F. Cervero; M.B., Ch.B., Ph.D.(Madrid), D.Sc.(Edin.)
J.S. Feine; D.D.S., M.S.(Texas), H.D.R.
J.P. Lund; B.D.S.(Adel.), Ph.D.(W. Ont.)
M.D. McKee; B.Sc., M.Sc., Ph.D.(McG.)

Associate Professors
J. E. Barralet; Ph.D., IRC(Lond.)
C. Bedos; D.D.S.(Paris), M.Sc., Ph.D.(Montr.)
P.J. Chauvin; B.Sc., D.D.S.(McG.), M.Sc.(W. Ont.), F.A.A.O.P.,
F.R.C.D.(C)
M. Dagenais; D.M.D.(Montr.), Dip. Oral Radiology(Tor.)
J.R. Emery; D.D.S., M.Sc.(McG.), F.R.C.D.(C), Dipl. A.B.O.M.S.
M.T. Kaartinen; M.Sc(Jyväskylä), Ph.D.(Kuopio, Finland)
H. LeMoual; D.E.A., M.Sc.(Paris), Ph.D.(Montr.)
S. Nazhat; B.Eng., M.Sc., Ph.D.(Lond.)
J.-M. Retrouvey; D.M.D.(Montr.), M.Sc.(Boston)
S. Schwartz; D.M.D.(Montr.), M.Sc. Cert. Pedo(Boston), F.I.C.D.,
F.A.C.D.

D. Reinhardt; Ph.D.(Munich)
M. Tabrizian; D.E.A., Ph.D.(Paris)
S. Tran; D.M.D.(Montr.), Cert. Perio, Ph.D.(Minn.)
H. Vali; B.Sc., Ph.D.(Germany)

Assistant Professors
S. Komarova; M.Sc., Ph.D.(Moscow)
M. Murshed; B.Sc.(Aligarh, India), M.Sc.(Free), Ph.D.(Cologne)
P. Schneiwerd; M.D.(Ruprecht-Karls Univ.), Ph.D.(Oxf.),
Postdoctoral Fellow(McG)
L. Stone; B.Sc.(Calif.), Ph.D.(Minn.)
A. Velley; D.D.S.(Brazil), M.Sc., Ph.D.(Montr.)
J. Veronneau; D.D.S., M.Sc.(Montr.), Ph.D.(McG.)
J. Zhang; M.D.(Second Medical), M.Sc.(Université Paris XIII), Ph.D.(Laval)

Adjunct Professor
B. Nicolaou; D.D.S.(Brazil), M.Sc., Ph.D.(Lond.)

Associate Members
E.L. Franco, E.G. Gisel, J. Morais, H. Warshawsky

20.2 Programs Offered

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

M.Sc. in Dental Sciences,
option in Oral and Maxillofacial Surgery
A residency training program in Oral and Maxillofacial Surgery
provides a candidate with a comprehensive background for the
practice of Oral and Maxillofacial Surgery as a specialty.

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

The program is open to one candidate per year.

Ph.D (Ad Hoc)

Ph.D (Ad Hoc)
The Faculty of Dentistry 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 Direc-
tor, exceptional students may transfer from the M.Sc. to the ad
hoc Ph.D. program.

20.3 Admission Requirements

M.Sc. in Dental Sciences
Students who have successfully completed a B.A. with a CGPA of
3.0 on a 4.0 scale are eligible to apply for admission to a graduate program in the Faculty of Dentistry leading to the M.Sc. degree in Dental Sciences. TOEFL (or IELTS) tests must be passed in the case of 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 Eng-
lish is the language of instruction or from a recognized Canadian
institution (anglophone or francophone).

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

M.Sc. in Dental Sciences,
option in Oral and Maxillofacial Surgery
Candidates for this program must possess a D.D.S. or D.M.D.
dergrees or its equivalent, and be acceptable to l’Ordre des
Dentistes du Québec as a training candidate in a hospital.
20.4 Application Procedures

Dates for Guaranteed Consideration

For dates for guaranteed consideration, please consult the following website: www.mcgill.ca/gradapplicants/programs. Then select the appropriate program.

McGill’s online application form for graduate program candidates is available at www.mcgill.ca/gradapplicants/apply.

M.Sc. in Dental Sciences

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

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

Applications may be obtained by writing to the Graduate Program in Dental Sciences, Faculty of Dentistry.

M.Sc. in Dental Sciences, option in Oral and Maxillofacial Surgery

Information for financial support for this program may be obtained by writing to Dr. T.W. Head, Director of the program. This is a four-year M.Sc. thesis program. Applicants applying to the OMFS program must apply to the Dental Residency Program (not Graduate Studies) with an Oral and Maxillofacial Surgery major. Prior to the start of the third year, students must submit an application to the M.Sc. Dental Sciences - OMFS program in order to complete the Program.

Further information may be obtained through our website at www.mcgill.ca/dentistry/admissions/omfs.

20.5 Program Requirements

All students who are registered in Graduate Clinical Programs in the Faculty of Dentistry, McGill University, and who are not already registered with l’Ordre, must register with l’Ordre des Dentistes du Québec. Further information may be obtained from the Registrar of l’Ordre des Dentistes du Québec, 625 René-Lévesque Boulevard West, 15th Floor, Montreal, QC, H3B 1R2.

M.SC. IN DENTAL SCIENCES (Thesis) (45 credits)

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

Required Courses (8 credits)

- DENT 504 (3) Biomaterials and Bioperformance
- DENT 654 (3) Mechanisms and Management of Pain
- DENT 653 (15) Thesis Research 4

Complementary Courses (37 credits)

- 7 - 13 credits from the following:
  - ANAT 663D1/D2 (4.5) Histology
  - ANAT 663D2/D3 (4.5) Histology
  - DENT 504 (3) Biomaterials and Bioperformance
  - DENT 654 (3) Mechanisms and Management of Pain
  - DENT 672 (3) Applied Mixed Methods in Health Research
  - EPIB 621 (3) Data Analysis Health Sciences 1
  - EPIB 635 (3) Clinical Trials
  - EPIB 655 (3) Epidemiology in Public Health
  - EXMD 610 (3) Biomedical Methods in Medical Research
  - PSYC 505 (3) The Psychology of Pain

M.SC. IN DENTAL SCIENCES (Non-Thesis) (45 credits)

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

Required Courses (26 credits)

- EPIB 606 (3) Introduction to Epidemiology
- EPIB 607 (4) Inferential Statistics (or equivalent course)
- BIOE 682 (3) Medical Basis of Bioethics
- EXMD 610 (3) Biomedical Methods in Medical Research
- DENT 671 (4) Advanced Research Seminar
- DENT 670 (9) Dental Research Project

Complementary Courses (minimum 19 credits)

- 19 credits from Stream 1 OR Stream 2:

  Stream 1. Basic science research methods
  - ANAT 663D1/D2 (9) Histology
  - ANAT 690D1/D2 (6) Cell and Developmental Biology
  - BMDE 505 (3) Cell and Tissue Engineering
  - DENT 504 (3) Biomaterials and Bioperformance
  - DENT 654 (3) Mechanisms and Management of Pain
  - EXMD 628 (3) Qualitative Research Methodology
  - MIMM 509 (3) Inflammatory Processes
  - PHGY 517 (3) Artificial Internal Organs
  - PHGY 518 (3) Artificial Cells
  - PHGY 550 (3) Molecular Physiology of Bone
  - PSYC 505 (3) The Psychology of Pain

  Stream 2. Clinical and population research methods
  - EDEM 692 (3) Qualitative Research Methods
  - EPIB 623 (3) Research Design in Health Sciences
  - EPIB 635 (3) Clinical Trials
  - EPIB 641 (1) Substantive Epidemiology 1
  - EPIB 646 (3) Evaluation of Health Services
  - EPIB 655 (3) Epidemiology in Public Health
  - EPIB 660 (3) Practical Aspects: Protocol Development
  - EPIB 669 (2) Special Topics 2
  - EPIB 671 (2) Special Topics 4
  - EPIB 677 (3) Special Topics 8
  - EPIB 679 (3) Special Topics 10
  - EPIB 695 (3) Principles of Study Design 2

Other complementary 500- or 600-level courses in the University may be taken with the approval of the supervisor or research director and GPS.

M.SC. IN DENTAL SCIENCE, OPTION IN ORAL AND MAXILLOFACIAL SURGERY (46 credits)

Duration: Four calendar years commencing July 1.

Students will register in the four-year graduate-training program, which leads to a McGill Certificate of Residency Training. They will concurrently register with Graduate and Postdoctoral Studies during the Third and Fourth years of the program and complete the requirements for the M.Sc. degree during these two years.

Required Courses (16 credits)

- DENT 631 (3) OMFS 2 Seminar
- DENT 632 (3) Clinical OMFS 2
- DENT 641 (3) OMFS 3 Seminar
- DENT 642 (3) Clinical OMFS 3
- EPIB 607 (4) Inferential Statistics (or equivalent course)

Thesis Component – Required (30 credits)

- DENT 651 (6) Thesis Research 2
- DENT 652 (9) Thesis Research 3
- DENT 653 (15) Thesis Research 4
20.6 Courses

Students preparing to register should consult Class Schedule on the web at www.mcgill.ca/student-records/register/class-schedule for the most up-to-date list of courses available; courses may have been added, rescheduled or cancelled after this Calendar was published. Class Schedule lists courses by term and includes days, times, locations, and names of instructors.

Courses with numbers ending D1 and D2 are taught in two consecutive terms (most commonly Fall and Winter). Students must register for both the D1 and D2 components. No credit will be given unless both components (D1 and D2) are successfully completed in consecutive terms.

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

**DENT 504 BIOMATERIALS AND BIOPERFORMANCE.** (3) Restrictions: Graduate and final year undergraduates from physical, biological, medical and dental sciences, and engineering. Biological and synthetic biomaterials, medical devices, and the issues related to their biopereformance. The physicochemical characteristics of biomaterials in relation to their biocompatibility and sterilization.

**DENT 631 OMFS 2 SEMINAR.** (3)

**DENT 632 CLINICAL OMFS 2.** (3)

DENT 632D1 (1.5), DENT 632D2 (1.5) CLINICAL OMFS 2. (Students must register for both DENT 632D1 and DENT 632D2) (No credit will be given for this course unless both DENT 632D1 and DENT 632D2 are successfully completed in consecutive terms) (DENT 632D1 and DENT 632D2 together are equivalent to DENT 632)

**DENT 641 OMFS 3 SEMINAR.** (3) Advanced seminar presented on a weekly basis on topics pertinent to Oral and Maxillofacial surgery.

**DENT 642 CLINICAL OMFS 3.** (3)

**DENT 650 THESIS RESEARCH 1.** (3) Independent work under the direction of a supervisor on a research problem in the student's designated area of research: Literature Review and Hypothesis Generation.

**DENT 651 THESIS RESEARCH 2.** (6) Independent work under the direction of a supervisor on a research problem in the student's designated area of research: Literature Review and Protocol Development.

**DENT 652 THESIS RESEARCH 3.** (9) Independent work under the direction of a supervisor on a research problem in the student's designated area of research.

**DENT 652D1 (4.5), DENT 652D2 (4.5) THESIS RESEARCH 3.** (Students must register for both DENT 652D1 and DENT 652D2) (No credit will be given for this course unless both DENT 652D1 and DENT 652D2 are successfully completed in consecutive terms) (DENT 652D1 and DENT 652D2 together are equivalent to DENT 652) Independent work under the direction of a supervisor on a research problem in the student's designated area of research.

**DENT 653 THESIS RESEARCH 4.** (15) Independent work under the direction of a supervisor on a research problem in the student's designated area of research: Data Analysis & Thesis Preparation.

**DENT 653D1 (7.5), DENT 653D2 (7.5) THESIS RESEARCH 4.** (Students must register for both DENT 653D1 and DENT 653D2) (No credit will be given for this course unless both DENT 653D1 and DENT 653D2 are successfully completed in consecutive terms) (DENT 653D1 and DENT 653D2 together are equivalent to DENT 653) Independent work under the direction of a supervisor on a research problem in the student's designated area of research: Data Analysis & Thesis Preparation.

**DENT 653J1 THESIS RESEARCH 4.** (5) (Students must also register for DENT 653J2 and DENT 653J3.) (No credit will be given for this course unless DENT 653J1, DENT 653J2, and DENT 653J3 are all successfully completed in consecutive terms.) (DENT 653J1, DENT 653J2 and DENT 653J3 together are equivalent to DENT 653 or DENT 653D1 and DENT 653D2 together.) Independent work under the direction of a supervisor on a research problem in the student's designated area of research: Data Analysis & Thesis Preparation.

**DENT 653J2 THESIS RESEARCH 4.** (5) (Prerequisite: DENT 653J1) (Students must also register for DENT 653J3) (No credit will be given for this course unless DENT 653J1, DENT 653J2, and DENT 653J3 are all successfully completed in consecutive terms.) (DENT 653J1, DENT 653J2 and DENT 653J3 together are equivalent to DENT 653 or DENT 653D1 and DENT 653D2 together.) See DENT 653J1 for course description.

**DENT 653J3 THESIS RESEARCH 4.** (5) (Prerequisite: DENT 653J2) (No credit will be given for this course unless DENT 653J1, DENT 653J2, and DENT 653J3 are all successfully completed in consecutive terms.) (DENT 653J1, DENT 653J2 and DENT 653J3 together are equivalent to DENT 653 or DENT 653D1 and DENT 653D2 together.) See DENT 653J1 for course description.

**DENT 654 MECHANISMS AND MANAGEMENT OF PAIN.** (3) Restrictions: Open to all health professionals. Presentation of the neurobiology of pain and analgesia, clinical pain conditions, basic and applied research methods in the study of pain, and the theory and practice of pain management. The course is designed for graduate students interested in pain mechanisms and clinical residents interested in pain management.

**DENT 669 EXTRACELLULAR MATRIX BIOLOGY.** (3) Advanced topics on extracellular matrix biology with emphasis on matrix molecules and their effects on cell communication, tissue structure and integrity.

**DENT 670 DENTAL RESEARCH PROJECT.** (9) (Restriction: Available only to those students registered in the non-thesis option of the M.Sc. in Dental Sciences.) Research project in dental sciences.

**DENT 671 ADVANCED RESEARCH SEMINAR.** (4) Topics in current research in Oral Health Sciences.

DENT 671D1 (2), DENT 671D2 (2) ADVANCED RESEARCH SEMINAR. (Students must register for both DENT 671D1 and DENT 671D2) (No credit will be given for this course unless both DENT 671D1 and DENT 671D2 are successfully completed in consecutive terms) (DENT 671D1 and DENT 671D2 together are equivalent to DENT 671) Topics in current research in Oral Health Sciences.

**DENT 671N1 ADVANCED RESEARCH SEMINAR.** (2) (Students must also register for DENT 671N2) (No credit will be given for this course unless both DENT 671N1 and DENT 671N2 are successfully completed in a twelve month period) (DENT 671N1 and DENT 671N2 together are equivalent to DENT 671) Topics in current research in Oral Health Sciences.

**DENT 671N2 ADVANCED RESEARCH SEMINAR.** (2) (Prerequisite: DENT 671N1) (No credit will be given for this course unless both DENT 671N1 and DENT 671N2 are successfully completed in consecutive terms.) (DENT 671N1 and DENT 671N2 together are equivalent to DENT 671) See DENT 671N1 for course description.

**DENT 672 APPLIED MIXED METHODS IN HEALTH RESEARCH.** (3) (Note: Contact hours: Monday to Friday from 9:00 a.m. to 4:30 p.m. (Faculty of Dentistry: 514-398-7203 extensions 096455 & 00059); language of instruction: English.) Qualitative and quantitative methods and how they can be used complementarily in health research. Exploration of appropriate mixed methods approach, questions and hypotheses, and pertinent data analysis.

21 Developing-Area Studies

See section 40, "International Development, Institute for the Study of..."
22 Dietetics and Human Nutrition

School of Dietetics and Human Nutrition
Room MS2-039, Macdonald Stewart Building
McGill University, Macdonald Campus
21,111 Lakeshore Road
Sainte-Anne-de-Bellevue, QC H9X 3V9
Canada

Email: lise.grant@mcgill.ca
Fax: 514-398-7739
Telephone: 514-398-7762

22.1 Staff

Professor Emerita
Harriet V. Kuhnlein; B.S.(Penn. St.), M.S.(Ore. St.), Ph.D.(Calif.), RD (joint appt. with Faculty of Medicine)

Professors
Luis B. Agellon; B.Sc., Ph.D.(McM.) (Canada Research Chair)
Tim A. Johns; B.Sc.(McM.), M.Sc.(Br. Col.), Ph.D.(Mich.) (joint appt. with Plant Science)

Associate Professors
Grace Egeland; B.A.(Luther College), Ph.D.(Pitts.) (Canada Research Chair)
Katherine Gray-Donald; B.Sc.(McG.), M.Sc.(Mich.), Ph.D.(Calif.) (Canada Research Chair)
Kristine G. Koski; B.S., M.S.(Wash.), Ph.D.(Calif.), RD (joint appt. with the Division of Experimental Medicine, Faculty of Medicine)
Stan Kubow; B.Sc.(McG.), M.Sc.(Tor.), Ph.D.(Guelph)
Grace S. Marquis; B.A.(Ind.), M.Sc.(Mich. St.), Ph.D.(C’nell) (Canada Research Chair)
Louise Thibault; B.Sc., M.Sc., Ph.D.(Laval), dt. p.
Hope Weiler; B.A.Sc.(Guelph), Ph.D.(McM.), RD (Canada Research Chair)
Linda J. Wykes; B.Sc., M.Sc., Ph.D.(Tor.) (William Dawson Scholar)

Faculty Lecturers
Linda Jacobs Starkey; B.Sc.(Mt. St. Vin.), M.Sc., Ph.D.(McG.), RD, FDC (Associate Dean of Students)
Sandy Phillips; B.Sc., M.Sc.A.(McG.), dt. p. (Interim - University Coordinator, Professional Practice (Stage) in Dietetics)
Hughes Plourde; B.Sc.(McG.), M.Sc.(Montr.), dt. p.
Heidi Ritter; B.Sc., M.Sc.(McG.), dt. p.

Associate Members
Anaesthesia: Franco Carli, Ralph Lattermann, Thomas Schrickcr
Food Science & Agricultural Chemistry: Selim Kermasha
Parasitology: Marilyn E. Scott

Adjunct Professors
Kevin A. Cockell (Health Canada), Mary L’Abbé (Tor.)

22.2 Programs Offered


The M.Sc. and Ph.D. programs are research degrees wherein students conduct research with one of the faculty members. Research in Human Nutrition spans nutritional biochemistry, clinical nutrition, community or international nutrition.

The M.Sc. Applied is intended to provide advanced learning in Nutrition with substantial course work and either a practicum in the field of Dietetics or a project in the area of Human Nutrition.

M.Sc. Applied students need not define their research area prior to enrolment.

In addition to their graduate degree, eligible candidates may complete the Graduate Diploma in Registered Dietitian Credentialing, the equivalent of a Dietetic Internship, to qualify for professional registration as Dietitians/Nutritionists in Canada.

Completion of the Graduate Diploma in Registered Dietitian Credentialing will increase the duration and cost of the program.

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

22.3 Admission Requirements

M.Sc.

Applicants must be graduates of a university of recognized reputation and hold a B.Sc. degree equivalent to a McGill Honours degree in a subject closely related to the one selected for graduate work. Applicants must have at least a cumulative grade point average (CGPA) in McGill University’s credit equivalency of 3.2/4.0 (second class-upper division) during their bachelor’s degree program in nutrition or a closely related field. High grades are expected in courses considered by the academic unit to be preparatory to the graduate program.

M.Sc. (Applied)

Applicants to the M.Sc. Applied project or practicum options must have a B.Sc. with a GPA of 3.2 or higher and 6 months’ work experience for the practicum option. All eligible candidates may select the project option. Applicants who have completed a dietetic internship and 6 months’ work experience are eligible to apply for the practicum option; it may be open to students who do not have a working knowledge of French, however, not all practicum opportunities will be open to them.

Graduate Diploma in R.D. Credentialing

For information on admissions requirements, applicants must contact Dr. Maureen Rose in the School of Dietetics and Human Nutrition.

Ph.D.

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

22.4 Application Procedures

Applicants for graduate studies must forward supporting documents to:

School of Dietetics and Human Nutrition
McGill University, Macdonald Campus
21,111 Lakeshore Road
Sainte-Anne-de-Bellevue, QC H9X 3V9
Canada

Telephone: 514-398-7762
Fax: 514-398-7739
Email: lise.grant@mcgill.ca

Applications will be considered upon receipt of a completed application form, $100 application fee, current resume, statement describing reasons for interest in the program and career goals, and the following supporting documents:

Transcripts - Two official copies of all university-level transcripts with proof that degree(s) were granted. Transcripts written in a language other than English or French must be accompanied by a certified translation. An explanation of the grading system used by the applicant’s university is essential. It is the applicant’s responsibility to arrange for transcripts to be sent.

It is desirable to submit a list of the titles of courses taken in the major subject, since transcripts often give code numbers only. Applicants must be graduates of a university of recognized reputation and hold a B.Sc. degree equivalent to a McGill Honours
Letters of Recommendation - Two letters of recommendation on letterhead (official paper) of the originating institution or bearing the university seal and with original signatures from two instructors familiar with the applicant's work, preferably in the applicant's area of specialization are minimally required. It is the applicant's responsibility to arrange for these letters to be sent.

Competency in English - 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 appropriate exams, e.g., TOEFL (minimum score 560 on the paper-based test, 220 on the computer-based, or 80 on the internet-based test with each component score not less than 20) or IELTS (minimum overall band 6.5). The MCHE is not considered equivalent. The School reserves the right to request TOEFL results. Please contact the School for details. Results must be submitted as part of the application. The University code is 0935 (McGill University, Montreal); please use Department code 31 (Graduate Schools), Biological Sciences - Agriculture, to ensure that your TOEFL reaches this office without delay.

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

SUBMITTED DOCUMENTS WILL NOT BE RETURNED.

Application Fee (non-refundable) - A fee of $100 Canadian must accompany each application (including McGill students), otherwise it cannot be considered. This sum must be remitted using one of the following methods:

1. Credit card (by completing the appropriate section of the application form). N.B.: online applications must be paid for by credit card.
2. Certified cheque in CAD$ drawn on a Canadian bank.
4. Canadian Money order in CAD$.
5. U.S. Money Order in USD$.
6. An international draft in Canadian funds drawn on a Canadian bank requested from the applicant's bank in his/her own country.

Dates for Guaranteed Consideration
For dates for guaranteed consideration, please consult the following website: www.mcgill.ca/gradapplicants/apply. Then select the appropriate program. It may be necessary to delay review of the applicant's file until the following admittance period if application materials including supporting documents are received after the dates for guaranteed consideration. International applicants are advised to apply well in advance of these dates because immigration procedures may be lengthy. Applicants are encouraged to make use of the online application form available on the web at www.mcgill.ca/gradapplicants/apply.

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

Qualifying Program if they have met the School's minimum CGPA of 3.2 out of 4.0. The course(s) to be taken in a Qualifying Program will be prescribed by the academic unit. Qualifying students are registered in graduate studies, but not as candidates for a degree. Only one qualifying year (two terms) is permitted. Successful completion of a qualifying program does not guarantee admission to a degree program. Students must re-apply for admission to a degree program.

22.5 Program Requirements

M.Sc. in Human Nutrition (45 credits)

Required Courses (33 credits)
NUTR 695 (1) Human Nutrition Seminar 1
NUTR 696 (1) Human Nutrition Seminar 2
NUTR 680 (6) M.Sc. (Thesis) 1
NUTR 681 (6) M.Sc. (Thesis) 2
NUTR 682 (9) M.Sc. (Thesis) 3
NUTR 683 (10) M.Sc. (Thesis) 4

Complementary Courses (12 credits)
3 credits in graduate-level Statistics
3 credits in graduate-level Research Methods

M.Sc. (Applied) in Human Nutrition (45 credits)

(For students who have not completed an undergraduate degree)

Qualifying Program if they have met the School's minimum CGPA of 3.2 out of 4.0. The course(s) to be taken in a Qualifying Program will be prescribed by the academic unit. Qualifying students are registered in graduate studies, but not as candidates for a degree. Only one qualifying year (two terms) is permitted. Successful completion of a qualifying program does not guarantee admission to a degree program. Students must re-apply for admission to a degree program.

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NUTR 681 (6) M.Sc. (Thesis) 2
NUTR 682 (9) M.Sc. (Thesis) 3
NUTR 683 (10) M.Sc. (Thesis) 4

Complementary Courses (12 credits)
3 credits in graduate-level Statistics
3 credits in graduate-level Research Methods

M.Sc. (Applied) in Human Nutrition (45 credits)

(For students who have not completed an undergraduate degree)

Qualifying Program if they have met the School's minimum CGPA of 3.2 out of 4.0. The course(s) to be taken in a Qualifying Program will be prescribed by the academic unit. Qualifying students are registered in graduate studies, but not as candidates for a degree. Only one qualifying year (two terms) is permitted. Successful completion of a qualifying program does not guarantee admission to a degree program. Students must re-apply for admission to a degree program.

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NUTR 682 (9) M.Sc. (Thesis) 3
NUTR 683 (10) M.Sc. (Thesis) 4

Complementary Courses (12 credits)
3 credits in graduate-level Statistics
3 credits in graduate-level Research Methods

M.Sc. (Applied) in Human Nutrition (45 credits)

(For students who have not completed an undergraduate degree)

Qualifying Program if they have met the School's minimum CGPA of 3.2 out of 4.0. The course(s) to be taken in a Qualifying Program will be prescribed by the academic unit. Qualifying students are registered in graduate studies, but not as candidates for a degree. Only one qualifying year (two terms) is permitted. Successful completion of a qualifying program does not guarantee admission to a degree program. Students must re-apply for admission to a degree program.

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M.Sc. in Human Nutrition (45 credits)

Required Courses (33 credits)
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NUTR 696 (1) Human Nutrition Seminar 2
NUTR 680 (6) M.Sc. (Thesis) 1
NUTR 681 (6) M.Sc. (Thesis) 2
NUTR 682 (9) M.Sc. (Thesis) 3
NUTR 683 (10) M.Sc. (Thesis) 4

Complementary Courses (12 credits)
3 credits in graduate-level Statistics
3 credits in graduate-level Research Methods

M.Sc. (Applied) in Human Nutrition (45 credits)

(For students who have not completed an undergraduate degree)

Qualifying Program if they have met the School's minimum CGPA of 3.2 out of 4.0. The course(s) to be taken in a Qualifying Program will be prescribed by the academic unit. Qualifying students are registered in graduate studies, but not as candidates for a degree. Only one qualifying year (two terms) is permitted. Successful completion of a qualifying program does not guarantee admission to a degree program. Students must re-apply for admission to a degree program.

22.5 Program Requirements

M.Sc. in Human Nutrition (45 credits)

Required Courses (33 credits)
NUTR 695 (1) Human Nutrition Seminar 1
NUTR 696 (1) Human Nutrition Seminar 2
NUTR 680 (6) M.Sc. (Thesis) 1
NUTR 681 (6) M.Sc. (Thesis) 2
NUTR 682 (9) M.Sc. (Thesis) 3
NUTR 683 (10) M.Sc. (Thesis) 4

Complementary Courses (12 credits)
3 credits in graduate-level Statistics
3 credits in graduate-level Research Methods

M.Sc. (Applied) in Human Nutrition (45 credits)

(For students who have not completed an undergraduate degree)

Qualifying Program if they have met the School's minimum CGPA of 3.2 out of 4.0. The course(s) to be taken in a Qualifying Program will be prescribed by the academic unit. Qualifying students are registered in graduate studies, but not as candidates for a degree. Only one qualifying year (two terms) is permitted. Successful completion of a qualifying program does not guarantee admission to a degree program. Students must re-apply for admission to a degree program.
ANSC 552  (3)  Protein Metabolism and Nutrition  
ANSC 635*  (3)  Vitamins and Minerals in Nutrition  

Note: Courses marked above with an asterisk (*) will not be offered in 2009-10.  

Elective courses  (9 credits)  
9 credits of graduate-level courses  

Graduate Diploma in Registered Dietitian Credentialing  
(30 credits)  
The Graduate Diploma is open to students who have completed a graduate degree with the School of Dietetics and Human Nutrition including NUTR 513 Credentialing in Dietetics.  

Required courses  
NUTR 612  (8)  Graduate Professional Practice 2 Management  
NUTR 613  (14)  Graduate Professional Practice 3 Clinical Nutrition  
NUTR 614  (8)  Graduate Professional Practice 4 Community Nutrition  

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

22.6 Courses  
Students preparing to register should consult Class Schedule on the web at www.mcgill.ca/student-records/register/class-schedule for the most up-to-date list of courses available; courses may have been added, rescheduled or cancelled after this Calendar was published. Class Schedule lists courses by term and includes days, times, locations, and names of instructors.  
The course credit weight is given in parentheses after the title.  
Term(s) offered (Fall, Winter, Summer) may appear after the credit weight to indicate when a course would normally be taught. Please check Class Schedule to confirm this information.  
★ Denotes courses taught only in alternate years. (Some courses are given every second year.)  
Students may also take courses in other faculties such as Medicine or Education.  

NUTR 501 NUTRITION IN DEVELOPING COUNTRIES.  (3) (Fall) (2 lectures and one seminar) (Prerequisite: For undergraduate students, consent of instructor required) This course will cover the major nutritional problems in developing countries. The focus will be on nutrition and health and emphasize young children and other vulnerable groups. The role of diet and disease for each major nutritional problem will be discussed.  

NUTR 503 BIOENERGETICS AND THE LIFESPAN.  (3) (Fall) (Prerequisites: Undergraduate Basic Biochemistry (3 credits), Undergraduate Mammalian Physiology (EDKP 331 or PHGY 202 or PHGY 210 or ANSC 323), Undergraduate Introductory Nutrition (EDKP 392 or NUTR 207 or NUTR 307)) Multidisciplinary approach that integrates principles of bioenergetics with nutrition through the lifespan.  

NUTR 511 NUTRITION AND BEHAVIOUR.  (3) (2 lectures and one seminar) (Prerequisite: NUTR 445 for undergraduate students or consent of instructor) Discussion of knowledge in the area of nutrition and behaviour through lectures and critical review of recent literature; to discuss the theories and controversies associated with relevant topics; to understand the limitations of our knowledge.  

Topics such as diet and brain biochemistry, stress, feeding behaviour and affective disorders will be included.  

NUTR 512 HERBS, FOODS AND PHYTOCHEMICALS.  (3) (3 lectures and a project) (Prerequisite (Undergraduate): FDSC 211 or BIOL 201 or BIOG 212) An overview of the use of herbal medicines and food phytochemicals and the benefits and risks of their consumption. The physiological basis for activity and the assessment of toxicity will be presented. Current practices relating to the regulation, commercialization and promotion of herbs and phytochemicals will be considered.  

NUTR 513 CREDENTIALING IN DIETETICS.  (3) (Prerequisite: Permission of instructor.) (Restriction: Not open to students who have taken NUTR 611.) Theoretical and practical integration of knowledge and skills required during graduate professional practice. Includes clinical assessment and nutritional monitoring techniques, analysis of interviewing and counselling situations, and application of management information systems and quality assurance procedures.  

NUTR 545 CLINICAL NUTRITION 2.  (5) (Fall) (Two 2.5-hour lectures) (This course includes a fee of $75 for a MGH authored manual on the subject of enteral feedings for tube-fed patients. The fee is refundable until the end of the add/drop period as long as the manual is intact.) (Prerequisites: NUTR 344 and ANSC 424) (Restriction: Not open to students who have taken NUTR 445) Clinical nutrition intervention for gastrointestinal and liver disease, hypermetabolic states, diabetes mellitus, renal disease and inborn errors of metabolism, enteral/parenteral nutrition management.  

NUTR 551 ANALYSIS OF NUTRITION DATA.  (3) (Fall) (This course includes a fee of $50 for a course and lab manual prepared by the instructor of the course. The fee is refundable until the end of the add/drop period as long as the manual is intact.) (Prerequisite: NUTR 337) (Corequisite: NUTR 450) An applied course in analysis and interpretation of nutrition data sets. Introduction to specialized dietary and anthropometric computer programs. Written and oral presentation of results.  
★ NUTR 602 NUTRITIONAL - STATUS ASSESSMENT.  (3) (1 lecture and 1 lab) (Prerequisites: courses in human nutrition, biochemistry and physiology.) The understanding and evaluation of dietary and anthropometric indices used in the nutritional assessment of individuals and groups.  
★ NUTR 604 INTEGRATED METABOLIC RESEARCH.  (3) (2 seminars and 1 lab visit) (Prerequisites: at least one 500 or 600-level course in nutritional biochemistry, e.g. ANSC 551, ANSC 552, ANSC 634, and permission of instructor.) An in-depth analysis of concepts and investigative approaches to in vivo metabolic nutrition research. Seminars will emphasize stable isotope kinetic studies. Visiting scientists and tours of other laboratories will expose students to different approaches to research.  

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

NUTR 608 SPECIAL TOPICS 1.  (3) (Prerequisite: Permission of instructor and Director of School.) (Restriction: Graduate students in Nutrition.) Prescribed reading, conference, lectures, assignments and/or practical work on selected topics in student's area of specialization. An approved course outline must be on file in the School's office prior to registration.  

NUTR 609 SPECIAL TOPICS 2.  (3) (Prerequisite: Permission of instructor and Director of School.) (Restriction: Graduate students in Nutrition.) An individualized course to allow students to undertake projects in library, laboratory, or field study. An approved course outline must be on file in the School's office prior to registration.
NUTR 610 Maternal and Child Nutrition. (3) Advanced discussion of the scientific basis for nutrient requirements during pregnancy, lactation, and infant nutrition in humans and comparative animal species; milk and formula composition; malnutrition and supplemental feeding programs in developed and developing countries; nutrient requirements and controversial issues in childhood and adolescent nutrition.

NUTR 612 Graduate Professional Practice 2 Management. (8) (Prerequisite: NUTR 513) (Restriction: Limited to students registered in the Graduate Diploma in R.D. Credentialing.) Assessment, planning, implementation, communication, and evaluation of clinical nutrition care. Focus is on application of management theory in dietetic practice.

NUTR 613 Graduate Professional Practice 3 Clinical Nutrition. (14) (Prerequisite: NUTR 513) (Restriction: Limited to students registered in the Graduate Diploma in R.D. Credentialing.) Assessment, planning, implementation, communication, and evaluation of public health and community nutrition programs for a variety of individuals and population groups. Focus is on intervention strategies and their evaluation.

NUTR 614 Graduate Professional Practice 4 Community Nutrition. (8) (Prerequisite: NUTR 513) (Restriction: Limited to students registered in the Graduate Diploma in R.D. Credentialing.) Assessment, planning, implementation, communication, and evaluation of public health and community nutrition programs for a variety of individuals and population groups. Focus is on intervention strategies and their evaluation.

NUTR 651 M.Sc. (Applied) Nutrition 1. (3) (Corequisites: NUTR 606, NUTR 685) Review of literature and problem definition for both the project option or for placement preparation for practicum option. This course relates to the Human Nutrition M.Sc. (Applied) degree and is required for both project and practicum options.

NUTR 652 M.Sc. (Applied) Project 1. (3) (Prerequisite: NUTR 651) Project design and planning.

NUTR 653 M.Sc. (Applied) Project 2. (3) (Prerequisite: NUTR 652) Project execution. This project relates to the Human Nutrition M.Sc. (Applied) degree.

NUTR 654 M.Sc. (Applied) Project 3. (3) (Prerequisite: NUTR 653) Continuation of project execution and data collection; preliminary analysis. This project relates to the Human Nutrition M.Sc. (Applied) degree.

NUTR 655 M.Sc. (Applied) Project 4. (3) (Prerequisite: NUTR 654) Data analysis. Submission of project report. This project relates to the Human Nutrition M.Sc. (Applied) degree.

NUTR 656 M.Sc. (Applied) Practicum 1. (3) (Prerequisite: NUTR 651) Clinical or community placement (4 weeks). Submission of placement report. This practicum relates to the Human Nutrition M.Sc. (Applied) degree.


NUTR 660 M.Sc. (Applied) Nutrition 2. (1) (Prerequisites: NUTR 653; NUTR 659 or NUTR 665) Oral presentation. This presentation relates to the Human Nutrition M.Sc. (Applied) degree, project and practicum options.


NUTR 701 Doctoral Comprehensive Examination. (0) (See Faculty Regulations)

NUTR 795 Human Nutrition Seminar 5. (0)

NUTR 797 Human Nutrition Seminar 3. (1) Doctoral candidates will present a recent original research article in which the methods and data presentation will be critically analyzed. The article must be approved by the instructor.

NUTR 798 Human Nutrition Seminar 4. (1) Doctoral candidates will present a group of recent research articles in which the methods and data presentation will be critically analyzed. The articles must be approved by the instructor.

23 Earth and Planetary Sciences

Department of Earth and Planetary Sciences
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Chair — J. Stix

23.1 Staff
Emeritus Professors
Jafar Arkani-Hamed; B.Eng.(Tehran), Ph.D.(MIT)
Eric W. Mountjoy; B.A.Sc.(Br. Col.), Ph.D.(Tor.)
Wallace H. MacLean; B.Geol.Eng.(Colo. Sch. of Mines), M.Sc.(A), Ph.D.(McG.)

Professors
Don Baker; B.A.(Chic.), Ph.D.(Penn. St.)
Donald Francis; B.Sc.(McG.), M.Sc.(Br. Col.), Ph.D.(MIT)
Andrew J. Hynes; B.Sc.(Tor.), Ph.D.(Cant.)
Olivia G. Jensen; B.Sc., M.Sc., Ph.D.(Br. Col.)

Associate Professors
Jeanne Paquette; B.Sc., M.Sc.(McG.), Ph.D.(Stonybrook)
Hojatollah Vail; B.Sc., M.Sc., Ph.D.(Munich) (Director, Electron Microscopy Centre)

Assistant Professors
Eric Galbraith; B.Sc.(McG.), Ph.D.(Br. Col.)
Jeffrey McKenzie; B.Sc.(McG.), M.Sc., Ph.D.(Syrac.)
Boswell Wing; A.B.(Harv.), M.A., Ph.D.(Johns H.)
Faculty Lecturer
W. Minarik; B.A.(St. Olaf), M.Sc.(Wash.), Ph.D.(Rensselaer Poly.)

Adjunct Professors
M. Duchesne, H. Hofmann, H. Short, B. Sundby

Retired Professors
R. Hesse, R.F. Martin

### 23.2 Programs Offered

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

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

### AREAS OF RESEARCH

**Economic Geology**
Application of geochemistry in understanding the genesis of hydrothermal mineral deposits (Cu, Mo, W, Sn, Au, Ag, and REE), in particular those associated with igneous rocks. Experimental simulations of fluid-rock interaction and investigation of metal solubility and speciation at elevated temperatures and pressures.

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

**High-Temperature Geochemistry**
Experimental and theoretical studies of melting and crystallization in oxide, silicate and sulphide systems at temperatures and pressures up to 2200°C and 5.5 Gpa. Spectroscopic studies of the structure of silicate melts and their transport properties, diffusion and viscosity. Effects of volatiles on the melting and crystallization of igneous systems.

**Igneous Petrology**
Orogenic and non-orogenic magmatism, alkali feldspars as indicators of magmatic and post-magmatic processes; high-temperature geochemistry, experimental investigation of petrogenetic processes, structure and properties of silicate melts and glasses, physical and chemical controls on volcanic eruptions.

**Mineralogy/Crystal Chemistry**
Studies of crystal growth mechanism of minerals, with emphasis on carbonate minerals, natural and synthetic, of sedimentary and hydrothermal origin. X-ray diffraction, electron probe microanalysis, atomic force microscopy and cathodoluminescence are used to study the influence of conditions of growth on the incorporation of trace elements, surface topography and crystal morphology.

**Petroleum Geoscience**
Integrated studies of hydrocarbon reservoirs using 3-D seismic data, borehole logs, core and outcrop analogues; reservoir compartmentalization by stratigraphic and structural features; attribute-based prediction of physical properties; naturally fractured light-gas reservoirs.

**Planetary Sciences**
Geophysical potential fields, dynamics of planetary interiors; global geodynamics and physics of Earth’s interior; seismology – tectonophysics, geophysical systems analysis. Origin and evolution of basic magmas in the mantles of the terrestrial planets.

**Sedimentary Geology**
Sedimentology and stratigraphy of modern and ancient clastic and carbonate systems from outcrop, marine sampling, and subsurface data; sequence stratigraphy; diagenesis.

**Tectonics**
Tectonics and structural geology, transpression in the Canadian Cordillera, origin of the Hudson Bay Arc, gravity features of sutures in the Canadian Shield, uplift of the Laurentides, palaeomagnetism and plate motions.

**Volcanology**
Physical and chemical approaches to the study of active volcanoes and magmatic-hydrothermal systems; caldera systems, including the chemistry of silicic volcanic rocks, field and experimental studies of collapse mechanisms, and comparisons of recent and ancient caldera systems; magmatic volatiles and volcanic gas studies; arc volcanism, including eruption monitoring; and subaqueous volcanism, including experimental studies of subaqueous pyroclastic flows, and fragmentation of magma.

### 23.3 Admission Requirements

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

### 23.4 Application Procedures

#### Dates for Guaranteed Consideration

For dates for guaranteed consideration, please consult the following website: www.mcgill.ca/gradapplicants/programs. Then select the appropriate program.

Applicants who want to be considered for entrance awards, or requiring financial assistance, should apply before the dates for guaranteed consideration. There are no special forms required to apply for financial aid from the Department, as all applicants will be considered for the awards for which they are eligible.

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

McGill’s online application form for graduate program candidates is available at www.mcgill.ca/gradapplicants/apply.

### 23.5 Program Requirements

#### M.Sc. in Earth and Planetary Sciences (Thesis) (45 credits)

**Required Courses** (3 credits)
EPSC 666 (3) Current Issues in Geosciences

**Complementary Courses** (9 credits)
three 3-credit graduate-level EPSC courses chosen with the approval of the research director and Director of Graduate Studies.

**Thesis Component – Required** (33 credits)
EPSC 697 (9) Thesis Preparation 1
EPSC 698 (12) Thesis Preparation 2
EPSC 699 (12) Thesis Preparation 3

#### M.Sc. in Earth and Planetary Sciences (Thesis) – Environment Option/Concentration (48 credits)

**Required Courses** (9 credits)
EPSC 666 (3) Current Issues in Geosciences

**Complementary Courses** (6 credits)
one 3-credit course at the 500 level or higher chosen with the approval of the research director and Director of Graduate Studies.
3 credits chosen from:
ENVR 519 (3) Global Environmental Politics
ENVR 544 (3) Environmental Measurement and Modelling
ENVR 580 (3) Topics in Environment 3
ENVR 611 (3) The Ecology of Nature
ENVR 620 (3) Environment and Health of Species
ENVR 622 (3) Sustainable Landscapes
ENVR 630 (3) Civilization and Environment 1
ENVR 680 (3) Topics in Environment 4
or another course at the 500 level or higher recommended by the advisory committee and approved by the Environment Option Committee

Thesis Component – Required (33 credits)
EPSC 697 (9) Thesis Preparation 1
EPSC 698 (12) Thesis Preparation 2
EPSC 699 (12) Thesis Preparation 3

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

Required Courses (3 credits)
EPSC 666 (3) Current Issues in Geosciences
EPSC 700 (6) Preliminary Doctoral Examination

Complementary Courses (3 - 21 credits)
an approved program of courses at the 500 level or higher selected in consultation with the student’s academic adviser and approved by the Academic Standing Committee.

Thesis
Research leading to a Ph.D. thesis followed by an oral defense.

Ph.D. in Earth and Planetary Sciences – Environment Option/Concentration

Required Courses (9 credits)
EPSC 666 (3) Current Issues in Geosciences
EPSC 700 (0) Preliminary Doctoral Examination
ENVR 610 (3) Foundations of Environmental Policy
ENVR 650 (1) Environmental Seminar 1
ENVR 651 (1) Environmental Seminar 2
ENVR 652 (1) Environmental Seminar 3

Complementary Courses (3 - 15 credits)
3 credits chosen from:
ENVR 519 (3) Global Environmental Politics
ENVR 544 (3) Environmental Measurement and Modelling
ENVR 580 (3) Topics in Environment 3
ENVR 611 (3) The Ecology of Nature
ENVR 620 (3) Environment and Health of Species
ENVR 622 (3) Sustainable Landscapes
ENVR 630 (3) Civilization and Environment 1
ENVR 680 (3) Topics in Environment 4
or another course at the 500 level or higher recommended by the advisory committee and approved by the Environment Option Committee

0 - 12 credits of courses at the 500 level or higher selected in consultation with the student’s academic adviser and approved by the Academic Standing Committee.

Thesis
Research leading to a Ph.D. thesis followed by an oral defense.

23.6 Courses
Students preparing to register should consult Class Schedule on the web at www.mcgill.ca/student-records/register/class-schedule for the most up-to-date list of courses available; courses may have been added, rescheduled or cancelled after this Calendar was published. Class Schedule lists courses by term and includes days, times, locations, and names of instructors.

Term(s) offered (Fall, Winter, Summer) may appear after the credit weight to indicate when a course would normally be taught. Please check Class Schedule to confirm this information.

All courses have a weight or equivalent of three (3) credits.

EPSC 501 CRYSTAL CHEMISTRY. (3) (Fall) (2 hours lectures, 1 hour seminar) (Prerequisites: CHEM 203 or CHEM 213.) Discussion of crystal structures and compositions of important mineral groups, especially oxides, sulphites and silicates. Solid solution. Relation of structure to morphology and to chemical and physical properties of the rock-forming minerals.

EPSC 510 GEODYNAMICS AND GEOMAGNETISM. (3) (Fall) (3 hours lectures) (Prerequisites: EPSC 320, MATH 319, or equivalent, or permission of the instructor.) (Corequisite: EPSC 350) The gravity field of the Earth and planets, body and orbital dynamics of the Earth, moon and planets, tidal interactions of the Earth-moon-sun system, deformation of the Earth under static and dynamic loads, the magnetic field of the Earth and planets: the magnetosphere, the external radiation belts, magnetohydrodynamic models of the core dynamo, geochemical convection in the core, fluid dynamic motions of the outer core, dynamics of the inner core.

EPSC 519 ISOPE GEOLOGY. (3) (Fall) (3 hours lectures) (Prerequisites: equivalent of the U2 core program.) Geochronology, the fractionation of the stable isotopes, and applications to petrology and mineral deposits.

EPSC 525 SUBSURFACE MAPPING. (3) (Winter) (2 hours lectures, 3 hours laboratory) (Prerequisites: EPSC 455 or equivalent, or permission of instructor.) This course will provide participants the opportunity to learn how different types of data (wireline logs, seismic, etc.) are employed to map geological features in the subsurface. Lectures will teach participants about the physical basis of each of the data types, and the basic mapping and analytical techniques (e.g., geostatistics, gridding) that are employed in subsurface mapping. The principal focus will be on applying these techniques and concepts to real-world data sets.

EPSC 530 VOLCANOLOGY. (3) (Winter) (2 hours lectures, 3 hours laboratory) (Prerequisites: EPSC 212 and EPSC 312, or equivalent, or permission of instructor.) The physical mechanisms which drive volcanoes and volcanic activity are presented. Descriptive, practical and theoretical approaches to the study of volcanoes are discussed.


EPSC 547 MODELLING GEOCHEMICAL PROCESSES. (3) (Fall) (3 hours lectures) (Prerequisites: EPSC 220, MATH 222, or permission of instructor.) Advanced thermodynamics and kinetics will be applied to construct models that quantitatively investigate geochemical processes. Topics include, but are not restricted to: activity-composition relationships in solids, liquids and fluids, crystallization and melting, precipitation and dissolution, rates of geochemical processes, interaction of geological liquids and fluids with rocks and minerals.
EPSC 548 PROCESSES OF IGNEOUS PETROLOGY. (3) (Fall) (2 hours lectures, 1 hour seminar) (Prerequisite: EPSC 423) Investigation of the primary mechanisms causing the diversity of igneous rock compositions on the Earth, other planets, asteroids, and meteorite parent bodies.


EPSC 550 SELECTED TOPICS 1. (3) (Fall or Winter) (2 hours seminar, permission of department undergraduate advisor) Research seminar and/or lecture with readings in topics concerning aspects of current interests in Earth & Planetary Sciences.

EPSC 551 SELECTED TOPICS 2. (3) (Fall or Winter) (2 hours seminar, permission of department undergraduate advisor) Research seminar and/or lecture with readings in topics concerning aspects of current interest in Earth & Planetary Sciences.

EPSC 552 SELECTED TOPICS 3. (3) (Fall or Winter) (2 hours seminar, permission of department undergraduate advisor) Research seminar and/or lecture with readings in topics concerning aspects of current interest in Earth & Planetary Sciences.

EPSC 561 ORE-FORMING PROCESSES 1. (3) (Fall) (3 hours seminar) (Prerequisite: One course in ore petrology (EPSC 451 or EPSC 452) or equivalent, or permission of the instructor.) Physico-chemical controls of hydrothermal mineral deposition. Discussion of fluid inclusion theory and application; stable isotope systematics, wall-rock alteration; ore mineral solubility and speciation; and mechanisms of mineral deposition.

EPSC 562 ORE-FORMING PROCESSES 2. (3) (Winter) (3 hours seminar) (Prerequisite: One course in mineral deposits (EPSC 451 or EPSC 452) or equivalent, or permission of the instructor.) Genesis of hydrothermal mineral deposits. Discussion of geological setting, fluid and metal sources, method of metal transport, and factors controlling metal concentration for a selection of hydrothermal mineral deposit types.

EPSC 570 COSMOCHEMISTRY. (3) (Fall) (3 hours lecture) (Prerequisites: EPSC 220, EPSC 210, or equivalent, or permission of instructor.) Examination of the implications of phase equilibria and the compositions of meteorites and the solar system for the formation and internal differentiation of the terrestrial planets and the nature of chemical fractionation processes in both planetary interiors and the solar system as a whole.

EPSC 580 AQUEOUS GEOCHEMISTRY. (3) (Fall) (3 hours lectures) (Prerequisites: EPSC 210, EPSC 212, or equivalent, or permission of instructor.) The use of chemical thermodynamics to study fluid-rock interactions with an emphasis on the aqueous phase. The course will introduce basic concepts and will discuss aqueous complexation, mineral surface adsorption, and other controls on crustal fluid compositions. Applications will range from considering contaminated groundwater systems to metamorphic reactions.

EPSC 590 APPLIED GEOCHEMISTRY SEMINAR. (3) (Winter) (3 hours seminar) (Prerequisite: permission of instructor) Seminar course devoted to field case studies that illustrate the applications of geochemical principles to solving geologic problems. Each student will prepare and lead a class devoted to a geochemical subject of their own choosing.

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

EPSC 603 MAFIC IGNEOUS ROCKS. (3) (3 hours seminar) (Prerequisite: EPSC 423 or equivalent) A survey of the petrochemistry of basic magmatic provinces with a focus on processes and the origin of terrestrial magmas in upper-mantle source regions.

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

EPSC 631 FIELD STUDIES - OROCENTIC BELTS. (3) Traverse of a major orogenic belt (usually the Acadian and Taconic of New Brunswick, Nova Scotia and Quebec). The principal tectonic units and the major igneous, depositional, metamorphic and tectonic events and processes. Interpretation of orogenic belts in terms of continental-margin evolution, the opening and closure of ocean basins, collision of island arcs and continents and the arrival of "rafted terrains".

EPSC 631D1 (1.5), EPSC 631D2 (1.5) FIELD STUDIES - OROCENTIC BELTS. (2-week field course in May, plus assigned papers) (Students must register for both EPSC 631D1 and EPSC 631D2) (No credit will be given for this course unless both EPSC 631D1 and EPSC 631D2 are successfully completed in consecutive terms) Traverse of a major orogenic belt (usually the Acadian and Taconic of New Brunswick, Nova Scotia and Quebec). The principal tectonic units and the major igneous, depositional, metamorphic and tectonic events and processes. Interpretation of orogenic belts in terms of continental-margin evolution, the opening and closure of ocean basins, collision of island arcs and continents and the arrival of "rafted terrains".

EPSC 644 TOPICS - ADVANCED EARTH SCIENCES 1. (3) (3 hours lectures or seminars) A survey of a research topic of particular current interest.

EPSC 645 TOPICS - ADVANCED EARTH SCIENCES 2. (3) (3 hours lectures or seminars) A survey of a research topic of particular current interest.

EPSC 666 CURRENT ISSUES IN GEO SCIENCES. (3) (Restriction: Open to graduate students enrolled in the EPS department.) Current issues in the range of geoscience disciplines.

EPSC 697 THESIS PREPARATION 1. (9) Independent study, theoretical and/or laboratory work in connection with the development of an M.Sc. thesis. Success in the course is dependent on presentation of an adequate progress report to the supervisory committee.

EPSC 697D1 (4.5), EPSC 697D2 (4.5) THESIS PREPARATION 1. (Students must register for both EPSC 697D1 and EPSC 697D2) (No credit will be given for this course unless both EPSC 697D1 and EPSC 697D2 are successfully completed in consecutive terms) (EPSC 697D1 and EPSC 697D2 together are equivalent to EPSC 697) Independent study, theoretical and/or laboratory work in connection with the development of an M.Sc. thesis. Success in the course is dependent on presentation of an adequate progress report to the supervisory committee.

EPSC 697N1 THESIS PREPARATION 1. (4.5) (Students must also register for EPSC 697N2) (No credit will be given for this course unless both EPSC 697N1 and EPSC 697N2 are successfully completed in the a twelve month period) (EPSC 697N1 and EPSC 697N2 together are equivalent to EPSC 697) Independent study, theoretical and/or laboratory work in connection with the development of an M.Sc. thesis. Success in the course is dependent on presentation of an adequate progress report to the supervisory committee.

EPSC 697N2 THESIS PREPARATION 1. (4.5) (Prerequisite: EPSC 697N1) (No credit will be given for this course unless both EPSC 697N1 and EPSC 697N2 are successfully completed in the a twelve month period) (EPSC 697N1 and EPSC 697N2 together are equivalent to EPSC 697) See EPSC 697D1 for course description.

EPSC 698 THESIS PREPARATION 2. (12) (Summer - Section 001 (01-May-2005/31-Aug-2005)) Independent study, theoretical and/or laboratory work in connection with the development of an M.Sc. thesis. Success in the course is dependent on presentation of an adequate progress report to the supervisory committee.
EPSC 699D1 (6), EPSC 698D2 (6) THESIS PREPARATION 2. (Students must register for both EPSC 698D1 and EPSC 698D2) (No credit will be given for this course unless both EPSC 698D1 and EPSC 698D2 are successfully completed in consecutive terms) (EPSC 698D1 and EPSC 698D2 together are equivalent to EPSC 698) Independent study, theoretical and/or laboratory work in connection with the development of an M.Sc. thesis. Success in the course is dependent on presentation of an adequate progress report to the supervisory committee.

EPSC 698N1 THESIS PREPARATION 2. (6) (Prerequisite: EPSC 698N2) (No credit will be given for this course unless both EPSC 698N1 and EPSC 698N2 are successfully completed in a twelve month period) (EPSC 698N1 and EPSC 698N2 together are equivalent to EPSC 698) Independent study, theoretical and/or laboratory work in connection with the development of an M.Sc. thesis. Success in the course is dependent on presentation of an adequate progress report to the supervisory committee.

EPSC 699 N1 THESIS PREPARATION 2. (6) (Students must also register for EPSC 699N2) (No credit will be given for this course unless both EPSC 699N1 and EPSC 699N2 are successfully completed in a twelve month period) (EPSC 699N1 and EPSC 699N2 together are equivalent to EPSC 699) Independent study, theoretical and/or laboratory work in connection with the development of an M.Sc. thesis. Success in the course is dependent on presentation of an adequate progress report to the supervisory committee.

EPSC 699D2 (6), EPSC 700D2 (6) THESIS PREPARATION 3. (Students must register for both EPSC 700D1 and EPSC 700D2) (No credit will be given for this course unless both EPSC 700D1 and EPSC 700D2 are successfully completed in consecutive terms) (EPSC 700D1 and EPSC 700D2 together are equivalent to EPSC 700) Independent study, theoretical and/or laboratory work in connection with the development of an M.Sc. thesis. Success in the course is dependent on presentation of an adequate progress report to the supervisory committee.

EPSC 700 PRELIMINARY DOCTORAL EXAMINATION. (0)

EPSC 700D1 (0), EPSC 700D2 (0) PRELIMINARY DOCTORAL EXAMINATION. (Students must register for both EPSC 700D1 and EPSC 700D2) (No credit will be given for this course unless both EPSC 700D1 and EPSC 700D2 are successfully completed in consecutive terms) (EPSC 700D1 and EPSC 700D2 together are equivalent to EPSC 700) Independent study, theoretical and/or laboratory work in connection with the development of an M.Sc. thesis. Success in the course is dependent on presentation of an adequate progress report to the supervisory committee.

EPSC 706 ADVANCED SEDIMENTOLOGY. (6) (2 hours lectures or seminar and 3 hours laboratory) Classical and recent papers on sedimentary processes and environments of transport, deposition, diagenesis and lithification, sedimentary mineral deposits. Basin evolution. Sedimentation and tectonics. Methods of study of sedimentary rocks and statistics.

EPSC 710 GEOTECTONICS. (3) (2 hours lectures or seminars) Plate tectonics and orogenesis. Plate tectonics in the geologic past. Problems of tectonic evolution in Precambrian time.

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

EPSC 725 INDEPENDENT STUDIES 1. (3) (Restriction: Not available to students who have taken EPSC 720. Ineligible for credit in M.Sc. Thesis program) Research and/or reading project. Independent study under the guidance of qualified staff in areas of special interest to the student.

EPSC 726 INDEPENDENT STUDIES 2. (3) Research and/or reading project. Independent study under the guidance of qualified staff in areas of special interest to the student.

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24 East Asian Studies

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Acting Chair — Grace S. Fong
Director of Graduate Program — Robin D.S. Yates

24.1 Staff

Professors
Kenneth Dean; B.A.(Brown), M.A., Ph.D.(Stan.)
Grace S. Fong; B.A., M.A.(Tor.), Ph.D.(Br.Col.)
Thomas LaMarre; B.A.(’Brown), M.A., Ph.D.(Chic.), D.Sc.(Aix-Marseille II)
Robin D.S. Yates; B.A., M.A.(Oxf.), M.A.(Calif.), Ph.D.(Harv.) (joint appt. with History)

Associate Professor
Griet Vankeerberghen; Lic.(Louvain), Ph.D.(Prin.) (joint appt. with History)

Assistant Professors
Gwen Bennett; B.A.(N’Western), M.A., Ph.D.(Calif.-LA) (joint appt. with Anthropology)
Yuriko Furuhata; B.A.(Int’l. Christian), M.A.(N. Mexico), Ph.D.(Brown)
Adrienne Hurley; B.A.(Col.), M.A.(Mich.), Ph.D.(Calif.)
Hajime Nakatani; B.A.(Tokyo), M.A.(Lond.), Ph.D.(Chic.) (joint appt. with Art History and Communications Studies)

Faculty Lecturers
Jennie Chang, Sumi Hasegawa, Myung Hee Kim, Miwako Uesaka, Bill Wang

Associate Members
Laurel Bossen (Anthropology)
Lara Brailstein (Religious Studies)
Christopher Green (Economics)
G. Victor Hori (Religious Studies)
Sandra Teresa Hyde (Anthropology)
Erik Kuhonta (Political Science)
John Kurien (Economics)
Catherine Lu (Political Science)

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McGill University, Graduate and Postdoctoral Studies 2009-2010 201
Program Requirements for the M.A. Degree (Ad Hoc)

General
TOEFL and GRE (if applicable).
Applicants who have not studied at a Canadian institution must submit official copies of their Graduate Record Examination. A minimum TOEFL score of 577 on the paper-based test (or 86 on the internet-based test), with each component score not less than 20 is required for all 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).

M.A.
Applicants must hold, or expect to hold by September of the year of entry, a bachelor's degree in East Asian Studies or related fields for entry into the M.A. program. Applicants are expected to have proficiency in the East Asian language(s) most useful for the proposed graduate work (preferably three years or more of course work or equivalent).

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

Admission Requirements

24.2 Programs Offered
M.A. in East Asian Studies (Ad Hoc)
Ph.D. in East Asian Studies (Ad Hoc)

24.3 Admission Requirements

General
TOEFL and GRE (if applicable).
Applicants who have not studied at a Canadian institution must submit official copies of their Graduate Record Examination. A minimum TOEFL score of 577 on the paper-based test (or 86 on the internet-based test), with each component score not less than 20 is required for all 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).

M.A.
Applicants must hold, or expect to hold by September of the year of entry, a bachelor's degree in East Asian Studies or related fields for entry into the M.A. program. Applicants are expected to have proficiency in the East Asian language(s) most useful for the proposed graduate work (preferably three years or more of course work or equivalent).

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

24.4 Application Procedures

Applications will be considered upon receipt of:
1. application form;
2. two copies of official transcripts sent by the university;
3. two letters of reference;
4. $100 application fee;
5. current curriculum vitae (résumé) and a research statement (approximately 500 words for master's and 5 pages for Ph.D.) indicating potential supervisor, the field which the applicant wishes to pursue, and the reasons for applying to the program.
A description of the proposed research project, with brief bibliography, should be included.

24.5 Program Requirements

Program Requirements for the M.A. Degree (Ad Hoc)
(45 credits)
The Department only offers a thesis option. The M.A. program with thesis includes:

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

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

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

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

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

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

There are four requirements for obtaining the doctoral degree:
1. Course work – 24 credits at the 600 or 700 level with a grade point average of 3.5 or better. On the basis of this course work, the student should identify three distinct fields for the Comprehensive Evaluation. Students may take up to 6 credits in another department with the approval of the Graduate Advisory Committee.
2. Language – Candidates will be required to demonstrate reading knowledge of a second Asian language, which may include either modern or literary (classical) language, in addition to the primary Asian language of their research. Candidates will also be expected to demonstrate reading knowledge of both French and English.
3. Ph.D. Comprehensive Evaluation – The student is required to pass the Comprehensive Evaluation within one year after completing course work. Exceptions have to be approved by the Graduate Advisory Committee.
4. Doctoral Dissertation – A thesis proposal (15-25 pages) should be submitted within six months after successful completion of the Ph.D. Comprehensive Evaluation, after consultation with the Graduate Program Director and the thesis supervisor. Before submission of the dissertation, candidates are expected to spend time in Asia researching their project. The Ph.D. thesis should represent original scholarship.

24.6 Courses

Students preparing to register should consult Class Schedule on the web at www.mcgill.ca/student-records/register/class-schedule for the most up-to-date list of courses available; courses may have been added, rescheduled or cancelled after this Calendar was published. Class Schedule lists courses by term and includes days, times, locations, and names of instructors.

Term(s) offered (Fall, Winter, Summer) may appear after the credit weight to indicate when a course would normally be taught. Please check Class Schedule to confirm this information.

Courses with numbers ending D1 and D2 are taught in two consecutive terms (most commonly Fall and Winter). Students must register for both the D1 and D2 components. No credit will be
EAST 501 ADVANCED TOPICS IN JAPANESE STUDIES 1. (3) (Fall) (Prerequisite (Undergraduate): permission of instructor) (Restriction: Departmental approval required) Consideration of selected topics and aspects of Japanese culture and society.

EAST 502 ADVANCED TOPICS IN JAPANESE STUDIES 2. (3) (Winter) (Prerequisite (Undergraduate): permission of instructor) (Restriction: Departmental approval required) Consideration of selected topics and aspects of Japanese culture and society.

EAST 503 ADVANCED TOPICS IN CHINESE STUDIES 1. (3) (Fall) (Prerequisite (Undergraduate): permission of instructor) (Restriction: Departmental approval required) Consideration of selected topics and aspects of Chinese culture and society.

EAST 504 ADVANCED TOPICS IN CHINESE STUDIES 2. (3) (Winter) (Prerequisite (Undergraduate): permission of instructor) (Restriction: Departmental approval required) Consideration of selected topics and aspects of Chinese culture and society.

EAST 515 SEMINAR: BEYOND ORIENTALISM. (3) (Prerequisite (Undergraduate): any EAS course at the 300 level or above or permission of instructor) Examination of cultural studies in the context of the"Other" and the"Self" in business communication.

EAST 520 FOURTH LEVEL KOREAN 1. (3) (Prerequisite: EAST 421 or permission of instructor.) (Restriction: Not open to students who have taken or are taking EAST 520D1/D2.) Continuation of EAST 421 (Third Level Korean 2) with more emphasis on writing and reading skills.

EAST 521 FOURTH LEVEL KOREAN 2. (3) (Prerequisite: EAST 520 or equivalent or permission of instructor.) (Restriction: Not open to students who have taken or are taking EAST 520D1/D2.) Continuation of EAST 520. The main focus and the course organization remain the same with more advanced content.

EAST 530 FOURTH LEVEL CHINESE. (6) (Summer) (Prerequisite (Undergraduate): EAST 430 or equivalent) Development of skills required to conduct academic discussions in oral as well as in written forms. Teaching materials include original texts from Chinese newspapers, Chinese literature and videos.

EAST 530D1 (3), EAST 530D2 (3) FOURTH LEVEL CHINESE. (Prerequisite (Undergraduate): EAST 430 or equivalent) (Students must register for both EAST 530D1 and EAST 530D2.) (No credit will be given for this course unless both EAST 530D1 and EAST 530D2 are successfully completed in consecutive terms) (EAST 530D1 and EAST 530D2 together are equivalent to EAST 530) Development of skills required to conduct academic discussions in oral as well as in written forms. Teaching materials include original texts from Chinese newspapers, Chinese literature and videos.

EAST 533 CLASSICAL CHINESE 1. (3) (Prerequisite: EAST 330 or equivalent.) (Restriction: Not open to students who have taken EAST 433.) An introduction to the grammar and syntax of classical Chinese. Readings are selected from well-known Confucian and Taoist classics, and philosophical and historical writings from pre-modern China.

EAST 534 CLASSICAL CHINESE 2. (3) (Prerequisite: EAST 330 or equivalent.) (Restriction: Not open to students who have taken EAST 434.) Continuation of EAST 533 at a more advanced level.

EAST 535 CHINESE FOR BUSINESS 1. (3) (Prerequisite: EAST 330 or equivalent or permission of instructor) This course aims to provide advanced students of Chinese with training in the terminology and syntax necessary for business communications. Topics will include many different aspects of business negotiations, such as price negotiation, methods of payment, etc.

EAST 536 CHINESE FOR BUSINESS 2. (3) (Prerequisite: EAST 535 or equivalent or permission of instructor) This course is a continuation of EAST 535. It is designed to further develop students' linguistic competence for business communication, and to provide students with some knowledge on China's trade policies as well as on different methods of trading with China.

EAST 537D1 (3), EAST 537D2 (3) CHINA TODAY THROUGH TRANSLATION. (Prerequisite (Undergraduate): students with native or near native proficiency may register directly, other students require permission of instructor) (Restriction: Not open to students who have taken EAST 437) (Students must register for both EAST 537D1 and EAST 537D2.) (No credit will be given for this course unless both EAST 537D1 and EAST 537D2 are successfully completed in consecutive terms) A course to develop practical translation skills and understanding of contemporary China, focusing on Sino-Canadian and multi-lateral political, cultural and trade issues. Interpretive skills will be enhanced through translation exercises and discussion in class. Course materials include original documents and videos from the business communications and other fields.

EAST 540D1 (3), EAST 540D2 (3) FOURTH LEVEL JAPANESE. (Prerequisite (Undergraduate): EAST 440 or equivalent or permission of instructor) (Restriction: Departmental approval required) Consideration of selected topics and aspects of Japanese culture and society.

EAST 541 SEMINAR: JAPANESE MAINLANDER LITERATURE. (3) (Prerequisite (Undergraduate): any EAS course at the 300 level or above or permission of instructor) The course will examine the literature of Japanese emigrants to the mainland of China, with a focus on the literature written in Chinese.

EAST 542 SEMINAR: JAPANESE LITERATURE IN A GLOBAL CONTEXT. (3) (Prerequisite (Undergraduate): any EAS course at the 300 level or above or permission of instructor) The course will explore the role of Japanese literature in the global context, with a focus on the literature written in Chinese.

EAST 543 CLASSICAL JAPANESE 1. (3) (Prerequisite (Undergraduate): EAST 443 or equivalent) The course will examine the literature of Japanese emigrants to the mainland of China, with a focus on the literature written in Chinese.

EAST 544 CLASSICAL JAPANESE 2. (3) (Prerequisite (Undergraduate): EAST 543 or permission of instructor) The course will examine the literature of Japanese emigrants to the mainland of China, with a focus on the literature written in Chinese.

EAST 545 ADVANCED READING: JAPANESE. (3) (Prerequisite (Undergraduate): EAST 445 or permission of instructor.) (Restriction: Departmental approval required) In-depth reading and analysis of Japanese texts. Readings will be selected from a variety of prose genres ranging from fiction to journalistic writing.

EAST 546 ADVANCED TRANSLATION IN JAPANESE. (3) (Prerequisite (Undergraduate): EAST 446 or equivalent of permission of instructor) (Restriction: Departmental approval required) Translation of Japanese texts into English or French. Materials will be selected from a variety of prose genres ranging from fiction to journalistic writing.

EAST 550 CLASSICAL CHINESE POETRY THEMES AND GENRES. (3) (Prerequisite (Undergraduate): EAST 433 or permission of instructor) A study of major themes and genres of classical Chinese poetry from its beginnings to the Yuan dynasty (14th century), with emphasis on critical analysis of text and context. Readings in the original.

EAST 551 TECHNOLOGIES OF SELF IN EARLY CHINA. (3) (Prerequisite (Undergraduate): One advanced course in EAS or permission of the instructor) Readings on self-cultivation drawn from Confucian, Legalist, and Taoist philosophic texts of early China (6th-2nd centuries B.C.) in translation will be compared with historical and archaeological materials on the evolving construction of the “individual” in Chinese social structure, military organization, political and ritual codes.

EAST 552 THE YIJING (BOOK OF CHANGES). (3) (Prerequisite: Any 300-level or above EAST course or permission of instructor.) (Note: No prior knowledge of Chinese required.) In-depth examination of the Yi Jing, known in the West as the Book of Changes. The course will combine close reading of this pivotal text and its numerous commentaries with a structural and cultural analysis of the
diverse functions it fulfilled through Chinese history - philosophical, political, religious, aesthetic and cosmological.

EAST 556 ADVANCED READING IN CHINESE. (3) (Prerequisite: EAST 430 or permission of instructor) (Restriction: Departmental approval required) In-depth reading and analysis of advanced Chinese texts. Readings will be selected from variety of prose genres ranging from fiction to journalistic writing.

EAST 557 ADVANCED TRANSLATION: CHINESE. (3) (Prerequisite: EAST 430 or equivalent or permission of instructor) (Restriction: Departmental approval required) Translation of Chinese texts into English or French. Materials will be selected from a variety of prose genres ranging from fiction to journalistic writing.

EAST 559 ADVANCED TOPICS: CHINESE LITERATURE. (3) (Prerequisite (Undergraduate): one advanced course in EAST or permission of instructor) Consideration of selected topics and aspects of Chinese literature. The content of the course may vary from year to year, ranging from contemporary to modern to pre-modern literature.

EAST 562 JAPANESE LITERARY THEORY AND PRACTICE. (3) (Prerequisite (Undergraduate): Any course in EAS above the 200 level and at least a year of an East Asian Language, or permission of the instructor) This course examines Japanese theories of literary production and practice with an emphasis on 20th century thought.

EAST 563 IMAGES, IDEOGRAMS, AESTHETICS. (3) (Prerequisite (Undergraduate): EAST 320 or EAST 330 or equivalent or permission of instructor) This course explores theories and usage of ideograms and images in Asian texts, both modern and premodern.

EAST 564 STRUCTURES OF MODERNITY: JAPAN. (3) (Prerequisite (Undergraduate): Any East Asian Studies course above the introductory level, or permission of the instructor) This course explores relations between some of the principal sites which structure the experience of "modernity" in Japan (and elsewhere) - from bodies and cities, to the urban context in general. Along with general approaches (e.g., the idea of everyday life; questions of time), specific topics may include speed, music, architecture, crime, etc.

EAST 569 ADVANCED TOPICS: JAPANESE LITERATURE. (3) (Prerequisite: one advanced course in EAS or permission of instructor) (Restriction: Departmental approval required) Consideration of selected topics and aspects of Japanese literature. The content of the course may vary from year to year from contemporary to modern to pre-modern literature.

EAST 576 ADVANCED READING IN KOREAN. (3) (Prerequisite: EAST 420 or permission of instructor) (Restriction: Departmental approval required) In-depth reading and analysis of advanced Korean texts. Readings will be selected from a variety of prose genres ranging from fiction to journalistic writing.

EAST 577 ADVANCED TRANSLATION: KOREAN. (3) (Prerequisite: EAST 420 or permission of instructor) (Restriction: Departmental approval required) Translation of Korean texts into English or French. Materials will be selected from a variety of prose genres ranging from fiction to journalistic writing.

EAST 582 JAPANESE CULTURE AND SOCIETY. (3) (Course will be taught by Vincent Mizra.)

EAST 600 EAST ASIAN STUDIES 1. (3)
EAST 601 EAST ASIAN STUDIES 2. (3)
EAST 619 TOPICS IN LITERARY THEORY. (3)
EAST 651 SEMINAR IN TAOIST STUDIES 1. (3)
EAST 652 SEMINAR IN TAOIST STUDIES 2. (3)
EAST 653 CHINESE POPULAR CULTURE 1. (3)
EAST 654 CHINESE POPULAR CULTURE 2. (3)
EAST 655 PREMODERN CHINESE POETRY. (3)
EAST 657 WOMEN’S WRITINGS IN TRADITIONAL CHINA. (3)
EAST 660 SEMINAR: JAPANESE FICTION. (3)
EAST 661 PREMODERN JAPANESE POETRY AND NARRATIVE. (3)
EAST 662 POPULAR CULTURE IN JAPAN. (3)
EAST 663 JAPANESE CULTURE AND THOUGHT. (3)
EAST 668 SEMINAR: SOCIAL CHANGE IN JAPAN. (3)
EAST 690 THESIS RESEARCH 1. (3)
EAST 691 THESIS RESEARCH 2. (3)
EAST 692 THESIS RESEARCH 3. (3)
EAST 693 THESIS RESEARCH 4. (3)
EAST 694 THESIS RESEARCH 5. (3)
EAST 695 THESIS RESEARCH 6. (3)
EAST 696 THESIS RESEARCH 7. (6)
EAST 696D1 (3), EAST 696D2 (3) THESIS RESEARCH 7. (Students must register for both EAST 696D1 and EAST 696D2) (No credit will be given for this course unless both EAST 696D1 and EAST 696D2 are successfully completed in consecutive terms) (EAST 696D1 and EAST 696D2 together are equivalent to EAST 696)
EAST 701 EAST ASIAN STUDIES 4. (6)
EAST 701D1 (3), EAST 701D2 (3) EAST ASIAN STUDIES 4. (Students must register for both EAST 701D1 and EAST 701D2) (No credit will be given for this course unless both EAST 701D1 and EAST 701D2 are successfully completed in consecutive terms)
25.4 Application Procedures

Applications will be considered upon receipt of:
1. online application form;
2. two copies of official transcripts sent by the university;
3. two letters of reference;
4. application fee of $100;
5. original TOEFL and/or GRE results, if applicable.

Information and electronic application form can be accessed from the Economics Department website at www.mcgill.ca/economics.

Dates for Guaranteed Consideration

For dates for guaranteed consideration, please consult the following website: www.mcgill.ca/gradapplicants/programs. Then select the appropriate program.

Deadline: February 1st for financial consideration.
III. M.A. Degree Program (Non-Thesis) Option in Development Studies:

The Development Studies Option (DSO) is a cross-disciplinary M.A. program offered as an option within existing M.A. programs in the departments of Geography, History, Political Science, Anthropology, Economics, and Sociology. This non-thesis option is open to master’s students specializing in development studies. Students enter through one of the participating departments and must meet the M.A. requirements of that unit. Students will take an interdisciplinary seminar and a variety of graduate-level courses on international development issues. The research essay must be on a topic relating to development studies, approved by the DSO coordinating committee.

M.A. in Economics (Non-Thesis) – Development Studies Option/Concentration (45 credits)

Required Courses (33 credits)

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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ECON 610</td>
<td>Microeconomic Theory 1</td>
<td>(3)</td>
</tr>
<tr>
<td>ECON 620</td>
<td>Macroeconomic Theory 1</td>
<td>(3)</td>
</tr>
<tr>
<td>ECON 634</td>
<td>Economic Development 3</td>
<td>(3)</td>
</tr>
<tr>
<td>ECON 650</td>
<td>Research 1</td>
<td>(3)</td>
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<tr>
<td>ECON 651</td>
<td>Research 2</td>
<td>(3)</td>
</tr>
<tr>
<td>ECON 680</td>
<td>M.A. Report 1</td>
<td>(3)</td>
</tr>
<tr>
<td>ECON 681</td>
<td>M.A. Report 2</td>
<td>(3)</td>
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<tr>
<td>ECON 682</td>
<td>M.A. Report 3</td>
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<tr>
<td>ECON 683</td>
<td>M.A. Report 4</td>
<td>(3)</td>
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<tr>
<td>ECON 734</td>
<td>Economic Development 4</td>
<td>(3)</td>
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<tr>
<td>INTD 657</td>
<td>Development Studies Seminar</td>
<td>(3)</td>
</tr>
</tbody>
</table>

Complementary Courses (12 credits)

3 or 6 credits from:

- ECON 662D1/D2 (3) Econometrics
- ECON 665 (3) Quantitative Methods
- 6 or 9 credits of additional courses, at the 500 level or higher, related to international development studies to be chosen in consultation with an advisor.

IV. M.A. Degree Program Non-Thesis Option in Social Statistics:

The program complements disciplinary training with research experience applying statistical methods to Statistics Canada data (or equivalent). Students will normally complete normal program course requirements, supplemented by further statistical courses, as advised by the Option advisor, and subject to approval by the home department. Students will complete a statistics-based M.A. research paper (Economics, Political Science, Sociology) or thesis (Geography) in conjunction with an interdisciplinary capstone seminar.

Acceptance into the program is by application to the Social Statistics Option Committee and is contingent on acceptance into the M.A. program in one of the participating departments (Economics, Geography, Political Science, Sociology), which in turn requires meeting Graduate and Postdoctoral Studies admission requirements.

M.A. in Economics (Non-Thesis) – Social Statistics Option/Concentration (45 credits)

Required Courses (30 credits)

Preparation courses and completion of research essay:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON 610</td>
<td>Microeconomic Theory 1</td>
<td>(3)</td>
</tr>
<tr>
<td>ECON 620</td>
<td>Macroeconomic Theory 1</td>
<td>(3)</td>
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<tr>
<td>ECON 650</td>
<td>Research 1</td>
<td>(3)</td>
</tr>
<tr>
<td>ECON 651</td>
<td>Research 2</td>
<td>(3)</td>
</tr>
<tr>
<td>ECON 654</td>
<td>Research Methods in Economics</td>
<td>(3)</td>
</tr>
<tr>
<td>ECON 680</td>
<td>M.A. Report 1</td>
<td>(3)</td>
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<tr>
<td>ECON 681</td>
<td>M.A. Report 2</td>
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<td>ECON 682</td>
<td>M.A. Report 3</td>
<td>(3)</td>
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<tr>
<td>ECON 683</td>
<td>M.A. Report 4</td>
<td>(3)</td>
</tr>
<tr>
<td>ECON 688</td>
<td>Seminar on Social Statistics</td>
<td>(3)</td>
</tr>
</tbody>
</table>

Complementary Courses (15 credits)

Must include either:

- ECON 662D1/D2 (6) Econometrics
- ECON 665 (3) Quantitative Methods

Additional courses, at the 500 level or higher, as determined by the student’s area of study.

REQUIREMENTS FOR THE PH.D. DEGREE

Coursework (20 credits)

20 credits in Economics beyond the M.A. requirements as described below:

- ECON 662D1/D2 (6) Econometrics (or equivalent)
- ECON 770 (1) PhD Research Seminar 1
- ECON 771 (1) PhD Research Seminar 2

At least 6 of the remaining 12 credits must be in a single field from the choices below:

- Advanced Theory
- Econometrics
- Economic Development
- Economic History
- Industrial Organization
- International Economics
- Health Economics
- Labour Economics
- Monetary Economics
- Public Finance

Other field combinations may be considered by the graduate program director as requested.

Ph.D. Comprehensive:

ECON 799 (0) Ph.D. Comprehensive Examination

Doctoral Dissertation

Three years of residence (credit for one year may be granted for master's work at McGill or for graduate study at another university).

Ph.D. Comprehensive Examination: This examination consists of written examinations in Macroeconomics, Microeconomics and two fields. A third field is also required, although this requirement is satisfied by successful completion of two courses in that field. It is expected that the Macro and Micro examinations will be written at the end of the first year and the field examinations at the end of the second year.

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

25.6 Courses

Students preparing to register should consult Class Schedule on the web at www.mcgill.ca/student-records/register/class-schedule for the most up-to-date list of courses available; courses may have been added, rescheduled or cancelled after this Calendar was published. Class Schedule lists courses by term and includes days, times, locations, and names of instructors.

Note: All undergraduate courses administered by the Faculty of Arts (courses at the 100 to 500 level) have limited enrolment. The course credit weight is given in parentheses after the title.

ECON 510 EXPERIMENTAL ECONOMICS. (3) (Prerequisites: ECON 230 or ECON 250 or permission of the instructor.) (Restrictions: For U3 students.) Experimental methodology, current topics in experimental economics, and market design.
ECON 525 PROJECT ANALYSIS. (3) (Restriction: Open to advanced undergraduate students. Prerequisite: ECON 250, ECON 352 or equivalent) A course in cost benefit analysis for graduate and advanced undergraduate students.

ECON 531 HISTORICAL EXPERIENCE OF ECONOMIC DEVELOPMENT. (3) (Prerequisite: ECON 230 or ECON 250 or equivalent) (Restriction: Not open to students who have taken ECON 631.) Examination of historical patterns of economic development.

ECON 534 PENSION CRISIS. (3) The consequences of commitments made by governments in the area of old age pensions and the implications of the resulting tax burden. An international perspective will be adopted.

ECON 546 GAME THEORY. (3) (Prerequisite: ECON 230 or ECON 250) (Restriction: Not open to students who have taken ECON 446. Open to advanced undergraduate students) This course introduces students to game theory, the branch of the social sciences that focuses on the formal modelling and analysis of human interactions and strategic behaviour. Basic concepts in cooperative and non-cooperative games are applied to economic models.

ECON 567 COMPLEX AND INTERACTIVE SYSTEMS. (3) (Prerequisites: ECON 250, ECON 352) (Restrictions: For Honours and Graduate students in Economics. Permission of the instructor required.) Behaviour in open (incomplete) economic systems as they relate to nonlinearity, chaos, adaptiveness, networks, externalities, dynamic competition, computable economics, simulation-driven analogies, disequilibrium dynamics, lock-in phenomena and path dependence, quasi-rationality with uncertainty and fuzzy constraints, evolutionary processes, genetic algorithms, etc.

ECON 577 MATHEMATICAL ECONOMICS 1. (3) (Prerequisites: MATH 133, MATH 139 and MATH 141 or equivalent) A mathematical treatment of basic economic theory.

ECON 602 ECONOMIC HISTORY. (3) (Selected topics in European and North American economic history are investigated from the standpoint of the interplay of institutional change and quantitative growth.

ECON 604 MACROECONOMICS FOR POLICY 1. (3)

ECON 605 MICROECONOMICS FOR POLICY 1. (3)

ECON 606 MICROECONOMICS FOR POLICY 2. (3)

ECON 607 MICROECONOMICS FOR POLICY 2. (3)

ECON 610 MICROECONOMIC THEORY 1. (3) This is the first in a two-course sequence in microeconomics. The core microeconomics sequence (ECON 610, ECON 611) provides a rigorous coverage of the economic foundation upon which economic fields are built. Most of the sequence is devoted to building up this foundation of consumer and firm optimisation (including choice under uncertainty), partial and general equilibrium, and welfare economics. The remainder of ECON 611 covers special topics that vary from year to year. These are likely to be drawn from the following: social choice; externalities and public goods; models of asymmetric information; the principal-agent framework; search; basic game theory.

ECON 611 MICROECONOMIC THEORY 2. (3) This is the second in a two-course sequence in microeconomics.

ECON 620 MACROECONOMIC THEORY 1. (3) This course is the first in a two-course sequence in macroeconomics. The course offers a thorough treatment of the fundamentals of macroeconomic theory. Emphasis is placed on the construction of economic models with microeconomic foundations. Topics include market-clearing and non-market-clearing models, capital accumulation, business cycles, monetary policy and fiscal policy.

ECON 621 MACROECONOMIC THEORY 2. (3) This is the second in a two-course sequence in macroeconomics. The course provides an in-depth analysis of selected issues in macroeconomic theory, extending and complementing the coverage provided in ECON 620.

ECON 622 PUBLIC FINANCE. (3) A survey of the role of government in the economy (excluding the macroeconomic side - stabilization, etc.). Topics include markets and market failure; public goods; externalities; the theory of the second-best and the study of collective choice, including voting; and the collection of revenue to finance government activity, including optimal taxation of commodities and income.

ECON 622D1 (1.5), ECON 622D2 (1.5) PUBLIC FINANCE. (Students must register for both ECON 622D1 and ECON 622D2) (No credit will be given for this course unless both ECON 622D1 and ECON 622D2 are successfully completed in consecutive terms) (ECON 622D1 and ECON 622D2 together are equivalent to ECON 622) A survey of the role of government in the economy (excluding the macroeconomic side - stabilization, etc.). Topics include markets and market failure, public goods, externalities, the theory of the second-best and the study of collective choice, including voting; and the collection of revenue to finance government activity, including optimal taxation of commodities and income.

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

ECON 624 INTERNATIONAL ECONOMICS. (3) A detailed examination of theories and policies in international trade and finance.

ECON 624D1 (1.5), ECON 624D2 (1.5) INTERNATIONAL ECONOMICS. (Students must register for both ECON 624D1 and ECON 624D2) (No credit will be given for this course unless both ECON 624D1 and ECON 624D2 are successfully completed in consecutive terms) (ECON 624D1 and ECON 624D2 together are equivalent to ECON 624) A detailed examination of theories and policies in international trade and finance.

ECON 625 ECONOMICS OF NATURAL RESOURCES. (3) The concept of optimal resource management and the associated rules, such as Hotelling's rule and Faustmann's rule. Implications of the need to sink capital for equilibrium in resource utilization under certainty and uncertainty. Conditions under which there is market failure and the merits of price and quantity instruments.

ECON 634 ECONOMIC DEVELOPMENT 3. (3) A systematic treatment of the characteristics and problems of economic development in underdeveloped countries.

ECON 637 INDUSTRIAL ORGANIZATION AND REGULATION. (3) An analysis of the nature of the firm, industrial structure and the effect of structure on firm and industry behaviour and performance.

ECON 641 LABOUR ECONOMICS. (3) A synthesis of theoretical developments in the area of labour economics with stress upon problems of empirical testing.

ECON 650 RESEARCH 1. (3) Preparation for work on M.A. thesis and M.A. research report.

ECON 651 RESEARCH 2. (3) Preparation for work on M.A. thesis and M.A. research report.

ECON 652 RESEARCH 3. (3) Preparation for work on M.A. thesis and M.A. research report.

ECON 653 RESEARCH 4. (3) Preparation for work on M.A. thesis and M.A. research report.

ECON 654 RESEARCH METHODS IN ECONOMICS. (3) Preparation of M.A. research papers.

ECON 660 HISTORY OF ECONOMIC THOUGHT. (3) Selected topics in the history of economic thought.

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

ECON 662D1 (3), ECON 662D2 (3) ECONOMETRICS. (Students must register for both ECON 662D1 and ECON 662D2) (No credit will be given for this course unless both ECON 662D1 and ECON 662D2 are successfully completed in consecutive terms) (ECON 662D1 and ECON 662D2 together are equivalent to ECON 662) A broad treatment of econometric methods, with particular reference
to time series processes. Estimation of linear and non-linear models, GLS, IV, Maximum Likelihood, parametric specification testing for linear and non-linear hypotheses, diagnostic testing (autocorrelation, heteroskedasticity, normality, parameter constancy, etc.), modelling technique, non-stationary data processes.

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

ECON 670 THESIS 1. (6)
ECON 671 THESIS 2. (6)
ECON 672 THESIS 3. (6)

ECON 675 ANALYSIS OF MACROECONOMIC POLICY. (3) (Prerequisites: ECON 620.) The underlying principles of the design, implementation, and analysis of macroeconomic policy, with applications to monetary policy, exchange-rate policy, tax policy to influence growth and distribution, and the effect of government spending and debt. Emphasis is placed on Canadian macroeconomic policy, although international comparisons are also discussed.

ECON 680 M.A. REPORT 1. (3) The M.A. Report must demonstrate the candidate’s ability to do independent work at the graduate level in a particular field of economics. While length will vary with the subject matter, it is expected that on average reports will be about 50 pages long. The Report will be graded jointly by two members of the Department. The supervisor will normally be one of the examiners.

ECON 681 M.A. REPORT 2. (3) The M.A. Report must demonstrate the candidate’s ability to do independent work at the graduate level in a particular field of economics. While length will vary with the subject matter, it is expected that on average reports will be about 50 pages long. The Report will be graded jointly by two members of the Department. The supervisor will normally be one of the examiners.

ECON 681D1 (1.5), ECON 681D2 (1.5) M.A. REPORT 2. (Students must register for both ECON 681D1 and ECON 681D2) (No credit will be given for this course unless both ECON 681D1 and ECON 681D2 are successfully completed in consecutive terms) (ECON 681D1 and ECON 681D2 together are equivalent to ECON 681) The M.A. Report must demonstrate the candidate’s ability to do independent work at the graduate level in a particular field of economics. While length will vary with the subject matter, it is expected that on average reports will be about 50 pages long. The Report will be graded jointly by two members of the Department. The supervisor will normally be one of the examiners.

ECON 682 M.A. REPORT 3. (3) The M.A. Report must demonstrate the candidate’s ability to do independent work at the graduate level in a particular field of economics. While length will vary with the subject matter, it is expected that on average reports will be about 50 pages long. The Report will be graded jointly by two members of the Department. The supervisor will normally be one of the examiners.

ECON 682D1 (1.5), ECON 682D2 (1.5) M.A. REPORT 3. (Students must register for both ECON 682D1 and ECON 682D2) (No credit will be given for this course unless both ECON 682D1 and ECON 682D2 are successfully completed in consecutive terms) (ECON 682D1 and ECON 682D2 together are equivalent to ECON 682) The M.A. Report must demonstrate the candidate’s ability to do independent work at the graduate level in a particular field of economics. While length will vary with the subject matter, it is expected that on average reports will be about 50 pages long. The Report will be graded jointly by two members of the Department. The supervisor will normally be one of the examiners.

ECON 683 M.A. REPORT 4. (3) The M.A. Report must demonstrate the candidate’s ability to do independent work at the graduate level in a particular field of economics. While length will vary with the subject matter, it is expected that on average reports will be about 50 pages long. The Report will be graded jointly by two members of the Department. The supervisor will normally be one of the examiners.

ECON 705 READING COURSE: SELECTED TOPICS ECONOMICS. (3) Reading course in Economics.

ECON 706 SELECTED TOPICS. (3) (Prerequisites: ECON 610, ECON 620 and 6 additional credits at the 600 level) Reading course in Economics.

ECON 710 SELECTED TOPICS IN ECONOMICS. (3) Selected topics in specialized areas of Economic.

ECON 720 ADVANCED GAME THEORY. (3) The main focus of the course will be the “theory of social situations” (which is closely related to “game theory”) which is a new and integrative approach to the study of formal models (both cooperative and non-cooperative) in the social sciences.

ECON 721 ADVANCED MONETARY THEORY. (3) Selected topics in monetary theory, the theory of monetary policy, and the history of monetary institutions.

ECON 724 INTERNATIONAL ECONOMICS. (3) Selected problems in international trade, foreign exchange and international movements of capital.

ECON 726 TOPICS IN ENVIRONMENTAL ECONOMICS. (3) Topics in environmental economics.

ECON 734 ECONOMIC DEVELOPMENT 4. (3) Problems of economic growth and planning in selected underdeveloped countries. Topics covered vary from year to year in response to student interests; growth, poverty and income distribution, LDC labour markets and institutions, trade and development, international debt problems, issues in trade policy.

ECON 737 INDUSTRIAL ORGANIZATION AND REGULATION SEMINAR. (3) Builds on material covered in ECON 637. Problems are examined in greater depth with specific topics varying from year to year.

ECON 741 ADVANCED LABOUR ECONOMICS. (3) Selected theoretical and policy issues in labour economics.

ECON 742 EMPIRICAL MICROECONOMICS. (3) (Prerequisite: First term of ECON 662 and either ECON 634 or ECON 641, or consent of the instructor) Surveys the empirical techniques used in applied microeconomic fields, particularly development and labour economics. Focus is on the formulation of empirical models derived from economic theory, and on various estimation methodologies, including panel data econometrics, limited dependent variable models, and duration analysis. A “hands on” approach is emphasized.

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

ECON 750 SELECTED TOPICS: MICROECONOMICS. (3) Topics of interest to the students and staff. These topics will be in areas other than those covered by existing courses and particular attention will be paid to critiques of neoclassical economic theory.

ECON 752 TOPICS IN FINANCIAL ECONOMICS. (3) Selected topics in monetary economics and international finance for advanced graduate work in this area.

ECON 761 ECONOMETRICS: TIME SERIES ANALYSIS. (3) (Restriction: Not open to students who have taken ECON 762) (Offered only in some years) Theory and application of linear, non-linear expectational and asymptotic time series models to economic phenomena. Probabilistic models of economic dynamics and experimental economies, including simulation.

ECON 762 ECONOMETRICS - ASYMPTOTIC AND FINITE - SAMPLE. (3) Exact and asymptotic distribution theory in econometrics: basic results for estimation and inference in regression models, extensions and other selected topics including nonparametric and distribution-free methods for econometric models.
ECON 762D1 (1.5), ECON 762D2 (1.5) Econometrics - Asymptotic and Finite-Sample. (Students must register for both ECON 762D1 and ECON 762D2) (No credit will be given for this course unless both ECON 762D1 and ECON 762D2 are successfully completed in consecutive terms) (ECON 762D1 and ECON 762D2 together are equivalent to ECON 762) Exact and asymptotic distribution theory in econometrics: basic results for estimation and inference in regression models, extensions and other selected topics including nonparametric and distribution-free methods for econometric models.

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

ECON 765 Models for Financial Economics. (3) (Prerequisite: Permission of instructor.) A review of mathematical techniques used in modern finance theory, including measure theory and stochastic processes in continuous time (e.g., Brownian motion) and other techniques essential to understanding arbitrage pricing theory, including the pricing of options.

ECON 770 Ph.D. Research Seminar 1. (1) (Prerequisites: All comprehensive and field examinations are to be completed.) (Note: ECON 770 and ECON 771 may be taken in either order.) Presentation of PhD research.

ECON 771 Ph.D. Research Seminar 2. (1) (Prerequisites: All comprehensive and field examinations are to be completed.) (Note: ECON 770 and ECON 771 may be taken in either order.) Presentation of PhD research.

ECON 799 Ph.D. Comprehensive Examination. (0)

ECON 799D1 (0), ECON 799D2 (0) Ph.D. Comprehensive Examination. (Students must register for both ECON 799D1 and ECON 799D2) (No credit will be given for this course unless both ECON 799D1 and ECON 799D2 are successfully completed in consecutive terms) (ECON 799D1 and ECON 799D2 together are equivalent to ECON 799)

26 Educational and Counselling Psychology

Department of Educational and Counselling Psychology
Education Building, Room 614
3700 McTavish Street
Montreal, QC H3A 1Y2
Telephone – Program Information: 514-398-4242
Fax: 514-398-6968
Website: www.mcgill.ca/edu-ecp

Chair — Alenoush Saroyan

Program Directors:
Counselling Psychology
Ada Sinacore

Human Development
Victoria Talwar

M.Ed. Streams in Educational Psychology
Tara Flanagan

Learning Sciences
Robert Bracewell

School/Applied Child Psychology
Jeffrey Derevensky

26.1 Staff

Emeritus Professors
Janet G. Donald; B.A., M.A.(W. Ont.), Ph.D.(Tor.) (joint appt. with Teaching and Learning Services)
Eigil Pedersen; B.A.(Sir G. Wms.), M.A.(McG.), Ed.D.(Harv.)
Howard A. Stutt; B.A.(Qu.), B.Ed., M.Ed.(Montr.), F.C.C.T.

Professors
Mark W. Aulls; B.S.(Ball St.), M.Ed.(Ind.), Ph.D.(Georgia)
Robert J. Bracewell; B.Sc., M.A.(McM.), Ph.D.(Tor.)
Jacob A. Burack; B.A.(Col.), M.S., M.Phil., Ph.D.(Yale)
Jeffrey L. Derevensky; B.A.(W. Ont.), M.Ed.(Ott.), Ph.D.(Tor.) (James McGill Professor)
Carl H. Frederiksen; B.A.(Harv.), M.A., Ph.D.(Ill.) (Sabbatical Leave)

Suzanne P. Lajoie; B.A., M.A.(McG.), Ph.D.(Stan.) (James McGill Professor) (Sabbatical Leave)

Elenoush Saroyan; B.A.(Pahlavi), M.Ed.(Loy. U. Chic.), Ph.D.(McG.)

Bruce M. Shore; B.Sc., M.A.(McG.), Ph.D.(Calg.)

Cynthia B. Weston; B.A.(G’town), M.L.S.(SUNY), D.Ed.(Wash.) (joint appt. with Teaching and Learning Services)

Associate Professors
Alain Breuleux; B.Sc., M.Sc., Ph.D.(Montr.)
Martin Drapeau; B.A.(Montr.), B.A. Ps.(Queb. à Trois-Rivières), M.P.(Laval), Ph.D.(Montr.) (Sabbatical Leave)

Marjory Fitzpatrick; B.A.(Tor.), M.Ed., Ph.D.(McG.)
Michael L. Hoover; B.S.(Tulane), M.A., M.Phil., Ph.D.(Col.)

Evelyn Lusthaus; B.A., M.S., Ph.D.(SUNY Buffalo) (on leave)

Robert Savage; B.A.(Oxf.), M.Sc.(Camb.), M.Sc., Ph.D.(Lond.)

(William Dawson Scholar) (Sabbatical Leave)

Ada L. Sinacore; B.A.(Montclair St.), M.A., M.Ed., Ph.D.(Col.)

Ingrid E. Sladecek; B.A., M.S., Ph.D.(Ariz.), A.A.(Md.) (Sabbatical Leave)

Ronald Stringer; B.Sc., M.A., Ph.D.(Tor.)

Victoria Talwar; M.A.(St. And.), M.A., Ph.D.(Qu.)

Assistant Professors

Tara Flanagan; B.A.(Winn.), M.A., Ph.D.(McG.)

Panayioti Kendeou; B.A.(U. Cypr.), M.A., Ph.D.(Minn.)

Annett Körner; M.A., Ph.D.(Leipzig)

Krista Muis; B.A.(Wat.), M.A., (Vic. (BC)), Ph.D.(SFU)

Jeeseon Park; B.A., M.A.(Yonsei), Ph.D.(Penn St.)

Steven R. Shaw; B.A., M.Ed., Ed.s., Ph.D.(Flor.)

Nathan Smith; M.Sc., Ph.D.(VCU)

Faculty Lecturer

Jack de Stefano; B.A.(Loyola), M.Ed., Ed.D.(McG.)

Associate Professors (Non-Tenure Track)

Renée Stevens; B.A.(Calif.-LA), M.A., Ph.D.(McG.) (part-time)

Marcia Delcourt; B.S.(Bloomburg St.), M.A., Ph.D.(Conn.) (part-time)

Associate Members

Reut Gruber; B.A., M.A., Ph.D.(Tel Aviv)

Daniel Levin; B.A.(Stan.), M.Sc., Ph.D.(Ore.)


Adjunct Professors


Research Associates

Dianne Bateman

Rina Gupta

Jazvinder Magon

Diana Tabatabai

Laura Winer

Joan B. Wolfforth

Professional Associates

Isabelle Martin

Alissa Sklar

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26.2 Programs Offered

The Department of Educational and Counselling Psychology offers the following M.A., M.Ed., Ph.D., and postdoctoral degrees:

Master of Arts (M.A.) Degrees

Students can obtain an M.A. degree in:

1) Counselling Psychology (Non-Thesis) with major concentrations in:
   - Project (research based) [Awaiting University Approval]
   - Professional/Internship (course work and internship based)

2) Educational Psychology with streams in:
   - Health Professions Education
   - Human Development
   - Learning Sciences
   - School/Applied Child Psychology

Master of Education (M.Ed.) Degrees

Students can obtain an M.Ed. degree in Educational Psychology. Please note these are all non-thesis options. The M.Ed. program in Educational Psychology offers streams in:

1) Family Life Education (admissions to Family Life Stream are currently suspended)
2) General Educational Psychology
3) Inclusive Education
4) Learning Sciences

Doctor of Philosophy (Ph.D.) Degrees

Students can obtain a Ph.D. Degree in:
1) Counselling Psychology
2) Educational Psychology with specialization in:
   - Human Development
   - Learning Sciences

3) School/Applied Child Psychology

Postdoctoral Degrees

The Department of Educational and Counselling Psychology offers one postdoctoral diploma:

- Post-Ph.D. Graduate Diploma in School/Applied Child Psychology

For information about these graduate programs please view our website at [www.mcgill.ca/edu-ecp/programs](http://www.mcgill.ca/edu-ecp/programs) or please contact the appropriate Program Coordinator:

For Educational Psychology programs (excluding School/Applied Child Psychology) contact:

Graduate Program Coordinator
Mrs. Geri Norton
Telephone: 514-398-4244
Email: edpsych.education@mcgill.ca

For Counselling Psychology and School/Applied Child Psychology contact:

Graduate Program Advisor
Ms. Carole Grossman
Telephone: 514-398-4245
Email: counsellingpsych.education@mcgill.ca or schoolpsych.education@mcgill.ca.

Professional Accreditation

The Ph.D. in School/Applied Child Psychology is accredited by the American Psychological Association (APA). The Ph.D. in Counselling Psychology is jointly accredited by the Canadian Psychological Association and the American Psychological Association.

IMPORTANT NOTE: The American Psychological Association has made a decision not to accredit programs outside of the United States of America effective September 1, 2015. The implication of this decision for students is that those who graduate from our programs after this date cannot attest to having graduated from an APA-accredited program. For further information regarding APA accreditation see: [www.apa.org/ed/accreditation/outsideusa.html](http://www.apa.org/ed/accreditation/outsideusa.html).

The Ordre des psychologues du Québec (OPQ) accredits both the Ph.D. in Counselling Psychology and the Ph.D. in School/Applied Child Psychology.

The M.A. (Non-Thesis) concentration in Professional/Internship in Counselling Psychology is accredited by the Ordre professionnel des conseillers et conseillères d’orientation et psychoéducateurs et psychoéducatrices du Québec (OCCOPQ). Graduates of this program meet the professional requirements for licensing as a Guidance Counsellor in Quebec. This program does not qualify graduates to meet the requirements for certification as a Psychologist.

The M.Ed. Educational Psychology Concentration in Family Life Education is approved by the Association of Family Life Educators of Quebec (AFLEQ). AFLEQ has established reciprocal recognition of qualifications with the Canadian Association of Family Life Educators. (Please note: admissions to the Family Life Education program are currently suspended.)

Graduate degrees in Counselling Psychology or School/Applied Child Psychology, and elsewhere in Educational Psychology, do not lead to teaching certification – see the Undergraduate Programs Calendar for B.Ed. programs ([http://coursecalendar.mcgill.ca/ug200910](http://coursecalendar.mcgill.ca/ug200910)). Holders of other undergraduate degrees may apply to enter the B.Ed. with advanced standing.

Research/Training Facilities

The Department houses a number of training and research units and maintains working relationships with specialized centres and research groups that offer opportunities for training and research to selected students. For a list of such groups, consult our website at [www.mcgill.ca/edu-ecp/research](http://www.mcgill.ca/edu-ecp/research).

26.3 Admission Requirements

The degrees offered by the Department of Educational and Counselling Psychology have program-specific application requirements. For details please read the specific requirements by program and review individual program websites ([www.mcgill.ca/edu-ecp/prospective](http://www.mcgill.ca/edu-ecp/prospective)).

26.4 Application Procedure

Applicants to all of our graduate programs are required to complete McGill’s online application form. Please see the following website for further information: [www.mcgill.ca/gradapplicants/apply](http://www.mcgill.ca/gradapplicants/apply).

For all other application procedures, including details about transcripts, letters of reference, Graduate Record Examination (GRE) and Test of English as a Foreign Language (TOEFL) scores and other program-specific requirements, please carefully review the details listed below, or visit our website at: [www.mcgill.ca/edu-ecp/prospective](http://www.mcgill.ca/edu-ecp/prospective).

Other than the online application, all required materials should be sent to the respective Graduate Program Coordinator at the address listed below. On the envelope, please state the Program, Degree (M.Ed., M.A. with or without thesis, Ph.D., or Doctoral Graduate Diploma) and requested area of specialization.
26.5.1 Graduate Degrees in Counselling Psychology – M.A.(Non-Thesis), Ph.D.

M.A. (NON-THESIS) COUNSELLING PSYCHOLOGY

Counselling psychology is a professional discipline that is underpinned by a number of basic sciences. In addition to training students to counsel professionally, this program teaches them to be intelligent consumers of the relevant research literature in this field and to do research in the applied aspects of the profession. For this purpose, it draws on the findings of developmental psychology, personality theory, social psychology, career psychology, and neuropsychology, among several other basic sciences.

The M.A. in Counselling Psychology program offers the following two concentrations:

(a) Professional/Internship (course work and internship based)
(b) Project (research based) [Awaiting University Approval]

Admission Requirements

Concentration: Professional/Internship

To be eligible, applicants must hold either:

1) A baccalaureate degree in psychology, including statistics, theories of personality, history and systems of psychology, abnormal psychology, developmental psychology, and social psychology (18 credit core), with a minimum CGPA of 3.0 out of 4.0.

OR

2) A baccalaureate degree in a field other than psychology, with a minimum CGPA of 3.0 out of 4.0, and sufficient academic preparation to meet the following requirements:

- 18 credits in psychology (consisting of core courses as listed above) and up to 24 credits in related disciplines in the social sciences.

Admission Requirements

Concentration: Project

To be eligible, applicants must hold a baccalaureate degree in psychology consisting of 42 credits of core courses in specific domains (see list in the Pre-Admission Academic Checklist in our application package).

All applicants are required to submit a completed application package consisting of:

1. McGill web application, available at [www.mcgill.ca/gradapplicants/apply);
2. Two (2) official copies of all university transcripts (sent directly to the Department);
3. A current CV (format based on template provided available on departmental website);
4. Three (3) letters of reference (format based on template provided; available on departmental website);
5. Letter of intent that should be NO LONGER than 500 words and needs to include (a) your reasons for applying to the program, (b) your career aspirations, (c) information relevant to your application to which you would like to direct the attention of the admissions committee; and (d)* a statement of research interest (* for applicants to the Project concentration only).
6. Pre-Admission Academic Checklist (format based on template available on departmental website).

For templates mentioned above, please visit the following section of the departmental website: [www.mcgill.ca/edu-ecp/programs/counselling/student]

Completed application packages should be sent to:

Carole Grossman, Graduate Program Advisor
Department of Educational & Counselling Psychology
Faculty of Education
McGill University
3700 McTavish Street, Room 614
Montreal, QC H3A 1Y2

M.A. (Non-Thesis) Counselling Psychology – Professional/Internship

Aims

The aim of the M.A. (Non-Thesis) in Counselling Psychology (Professional/Internship) is to produce graduates who (1) are trained in the major applied areas of Counselling; (2) will be qualified to work in a variety of settings where educational, vocational, personal, and developmental counselling is offered; (3) have had an extensive supervised internship in either a clinical or educational setting. This program qualifies graduates for membership into the L’Ordre des conseillers et conseillères d’orientation et des psychoéducateurs et psychoéducatrices du Québec (OCCOPPQ).

Program Requirements

This degree requires two years (four semesters) and one Summer term of full-time study. All students must also attend weekly case conferences.

M.A. (Non-Thesis) Counselling Psychology – Professional/Internship (60 credits)

Required Courses (30 credits)

EDPC 606 (3) Theories of Counselling 1
EDPC 607 (3) Theories of Counselling 2
EDPC 608 (3) Group Counselling: Theory
EDPC 609 (3) Psychological Testing 1
EDPC 615 (3) Assessment and Diagnosis in Counselling
EDPC 618 (3) Professional Ethics and the Law
EDPC 624 (3) Group Counselling: Practice
EDPC 626 (3) Career Psychology
EDPC 665D1 (3) Practicum
EDPC 665D2 (3) Practicum

Internship – Required (24 credits)

Four 6-credit components reflect various dimensions of the profession. Completion of the internship is essential to becoming a member of the OCCOPPQ.

EDPC 679D1 (3) Internship: General 1
EDPC 679D2 (3) Internship: General 1
EDPC 680D1 (3) Internship Research Seminar
EDPC 680D2 (3) Internship Research Seminar
EDPC 682D1 (3) Practicum: Psychological Testing
EDPC 682D2 (3) Practicum: Psychological Testing
EDPC 685D1 (3) Internship: Vocational and Rehabilitation Counselling
EDPC 685D2 (3) Internship: Vocational and Rehabilitation Counselling

Elective Courses (6 credits)

The following courses may be offered periodically and taken to complete or exceed the academic requirements. Electives may also be chosen from other courses offered by the Department or other departments of the University. Choice of electives requires approval of the student’s faculty advisor.

EDPC 616 (3) Individual Reading Course
EDPC 630 (3) Feminism, Women and Psychology
EDPC 635 (3) Counselling for Sexual Adjustment
EDPC 636 (3) Theories of Sex Therapy
EDPC 660 (3) Selected Topics in Counselling
EDPC 670 (3) Current Trends in Counselling
EDPC 6717 (3) Adolescent Development
M.A. (Non-Thesis) Counselling Psychology – Project
(Awaiting University Approval)

Aims
The M.A. (Non-Thesis) in Counselling Psychology (Project) is designed to produce graduates with introductory academic preparation for research or clinical careers in counselling psychology. Training is provided in the research domain through coursework in data analysis and a research project. Clinical preparation is initiated in the program through coursework in ethics, intervention, assessment, psychological testing and multicultural issues and through a practicum. The program is intended to give students research preparation for doctoral training. The degree alone does not fulfil the requirements for membership in the orders that certify either guidance counsellors (OCCOPPQ) or psychologists (OPQ) in Quebec.

M.A. (Non-Thesis) Counselling Psychology – Project
(45 credits)

Required Courses (42 credits)
EDPC 606 (3) Theories of Counselling 1
EDPC 609 (3) Psychological Testing 1
EDPC 615 (3) Assessment and Diagnosis 1
EDPC 618 (3) Professional Ethics and the Law
EDPC 619 (3) Research Project 1
EDPC 620 (3) Research Project 2
EDPC 621 (3) Research Project 3
EDPC 625 (3) Clinic Practicum 1
EDPC 626 (3) Clinic Practicum 2
EDPC 662 (3) Career Psychology
EDPC 682D1 (3) Practicum: Psychological Testing
EDPC 682D2 (3) Practicum: Psychological Testing
EDPE 622 (3) Multiculturalism and Gender
EDPE 682 (3) Univariate/Multivariate Analysis

Complementary Course (3 credits)
3 credits from the following:
EDPE 684 (3) Applied Multivariate Statistics
EDPE 687 (3) Qualitative Methods in Educational Psychology

PH.D. IN COUNSELLING PSYCHOLOGY

This program is built on the scientist-practitioner model. It is currently accredited by the Canadian Psychological Association (CPA), the Quebec Order of Psychologists (OPQ) and American Psychological Association (APA). The American Psychological Association will cease to accredit Canadian programs in 2015. The Ph.D. program’s aims are:

1. To develop professionals who are able to contribute to the advancement of knowledge in the field of counselling psychology through research that studies social phenomena that may impinge upon the practice of psychology. This research may be a study of the practice of counselling psychology or it may be broader in that it has indirect implications for practice.

2. To develop professionals who are able to evaluate the merits and weaknesses of current research in the field and its implications for the practice of counselling psychology.

3. To develop professionals who are able to integrate a broad theoretical and practical knowledge base into the practice and supervision of counselling psychology, that is, to train professionals capable of addressing complex issues and applying that understanding to practice and supervision.

4. To develop professionals who are able to take a leadership role in the profession at a variety of levels including community, university and professional organizational levels.

Graduates of the program will be prepared to assume careers in education and community settings, including faculty positions, counselling and psychological positions on the staff of university and college mental health centres, and professional positions in psychological agencies offering preventative mental health services.

Admission Requirements
To be eligible applicants must hold:
A master’s degree equivalent to the “M.A. (Non-Thesis) Counselling Psychology – Project” consisting of 42-credits of core courses in specific domains (see list in the Pre-Admission Academic Checklist in our application package).

All applicants are required to submit a completed application package consisting of:
2. Two (2) official copies of all university transcripts (sent directly to the Department);
3. Scores on the Graduate Record Examination (GRE) (both general and the psychology subject tests, sent directly to the Department);
4. Scores on the Test of English as a Foreign Language (TOEFL) (If you are an international student, sent directly to the Department);
5. A current CV (format based on template available on departmental website);
6. Three (3) letters of reference (format based on template available on departmental website);
7. Pre-Admission Academic Checklist (format based on template available on departmental website);
8. Letter of intent that should be NO LONGER than 500 words and needs to include (a) your reasons for applying to the program, (b) your career aspirations, and (c) any information relevant to your application to which you would like to direct the attention of the admissions committee;
9. Statement of your research interests that should provide an indication of how your interests correspond to the areas of expertise of the McGill Counselling Psychology program and its faculty;
10. A writing sample (e.g., paper for a course, M.A. thesis, publication).

For templates mentioned above, please visit the following section of the departmental website: www.mcgill.ca/edu-ecp/programs/counselling/studentp.

Completed application packages should be sent to:
Carole Grossman, Graduate Program Advisor
Department of Educational & Counselling Psychology
Faculty of Education
McGill University
3700 McTavish Street, Room 614
Montreal, QC H3A 1Y2

Additional Entrance Notes:
Ph.D. in Counselling Psychology applicants are advised that in accordance with the Quebec Order of Psychologists (OPQ), Canadian Psychological Association (CPA) and American Psychological Association (APA) criteria for doctoral program accreditation, all doctoral candidates must have a solid grounding in the history of psychology, biological basis of behaviour, developmental psychology, abnormal psychology, the social-cultural aspects and determinants of behaviour, cognitive-affective psychology, psychological measurement and assessment, statistics and personality. If applicants to this program do not have such courses in their undergraduate or master’s-level education, they will be required to take supplemental courses in these domains after entering the doctoral program.

Required Courses, Comprehensive Examination, and Internship (84 credits)

Required Courses (54 credits)
EDPC 702 (3) Assessment & Diagnosis 2
EDPC 714 (3) Theory / Models: Family Therapy
EDPC 720 (3) Consultation and Program Evaluation
EDPC 780 (6) Professional Development
EDPC 782 (6) Doctoral Field Experience
EDPC 786 (6) Seminar: Research Problems in Counselling...
EDPC 795 (24) Pre-doctoral Internship
EDPE 684 (3) Applied Multivariate Statistics
3 credits from the following:
EDPC 701 (0) Comprehensive Examination
EDPE 712 (3) Neurological Bases of Behavior

Electives (6 credits)
Credits must be at the 500 level or higher. Electives are on topics related to specialized interests and must be approved by the supervisor.

Dissertation

Other Requirements
Most applicants to the Ph.D. program enter with previous supervised fieldwork and with considerable educational and clinical counseling experience. Candidates must coordinate with their academic advisors an appropriate setting for their fieldwork (pre-doctoral practicum and internship). All students attend weekly case conferences.

26.5.2 Ph.D. School/Applied Child Psychology
This program is based on the science of psychology, with a primary foundation in the study of human development especially during childhood and adolescence, as well as psychopathology, the study of individual differences, learning, and the theory of assessment of human performance, potential, and other characteristics. The specific choice of domains is informed by concerns of professional practice such as consultation in home and school environments, other institutions, and techniques for assisting educators and families to address difficulties in learning and behaviour, and the full range of professional concerns of psychologists working within educational and related applied environments. This is a 96-credit, five-year fixed major that includes the M.A.

Admission Requirements
All doctoral students must have a research advisor upon entry to the program. Interested candidates should contact the program coordinator for a faculty list or consult the Department website. An advisor may be selected from among professors in the Department.

There are two entry levels and patterns:
• starting at Ph.D. 2
• starting at Ph.D. 1

The specific requirements to be admitted at each level are as follows:

Ph.D. 2 Level
Applicants should hold an M.A. in Educational Psychology from McGill or a recognized equivalent degree, reflecting high overall standing, study within the area of proposed doctoral specialization, and evidence of research competence.

The requirements for the M.A. (Thesis) Educational Psychology specialization in School/Applied Child Psychology are described in section 26.5.4 “Graduate Degrees in Educational Psychology – M.Ed. (Non-Thesis), M.A.”.

Ph.D. 1 Level
Applicants should hold an M.Ed. in Educational Psychology or a master's degree in a related discipline (e.g., sociology, social work, neuropsychology) lacking only the content in educational psychology that can be acquired within one year of full-time study. The applicant's academic record must reflect high overall standing and evidence of research competence.

All applicants are required to submit a completed application package consisting of:
2. Two (2) official copies of all university transcripts (sent directly to the Department);
3. Scores on the Graduate Record Examination (GRE) (both general and the psychology subject tests, sent directly to the Department);
4. Scores on the Test of English as a Foreign Language (TOEFL) (if you are an international student; sent directly to the Department);
5. A current CV (format based on template available on departmental website);
6. Three (3) letters of reference (format based on template available on departmental website);
7. Academic Checklist Form (format based on template available on the departmental website);
8. A 3-5 page summary proposal of the intended thesis research that should demonstrate the appropriateness of studying at McGill and within this Department;
9. A copy of a master's thesis, Honours thesis or research project (which will be returned after examination);
10. A letter from the applicant's prospective supervisor agreeing to act as their Ph.D. supervisor upon admittance into the program. Candidates should consult the departmental website for a faculty list, www.mcgill.ca/edu-ecp.

For templates mentioned above, please visit the following section of the departmental website: www.mcgill.ca/edu-ecp/programs/schoolapplied/prospective.

Completed application packages should be sent to:
Carole Grossman, Graduate Program Advisor
Department of Educational & Counselling Psychology
Faculty of Education
McGill University
3700 McTavish Street, Room 614
Montreal, QC H3A 1Y2

Additional Entrance Notes:

School/Applied Child Psychology
An undergraduate Major or Honours degree in Psychology is required including courses in developmental, abnormal and cognitive psychology, history and systems in psychology, and statistics. McGill Psychology graduates completing the 36-credit B.A. Major Concentration must complete at least 18 additional credits of senior undergraduate study in psychology or related subjects.

Students will enrol for two years in the M.A. (Thesis) in Educational Psychology with a specialization in School/Applied Child Psychology and will follow the course sequence noted below. Students will receive the M.A. following the second year having completed all the requirements and, should they maintain a sufficiently high standard of quality, may proceed directly to Ph.D. 2 in their third year of study. Should this standard not be met such students may elect to complete the M.A. or withdraw from the program.

Program Requirements
A dissertation must be submitted displaying original scholarship expressed in satisfactory literary form and constituting a distinct contribution to knowledge on a problem in school/applied child psychology. Work on the dissertation normally begins in the Ph.D. 2 year and becomes the major concern in the Ph.D. 3 year of a student's program of study.

Each student will be supervised by an advisor who will chair the student's doctoral committee. This committee will have a minimum of three members. It will assist the student and advisor in planning the student's program.
Admission Requirements

1. An earned doctorate in Educational Psychology, another area of Psychology, or a closely related discipline (to be recognized by the Program Committee).
2. Graduate Record Examination Verbal, Quantitative, and Psychology results taken within the past 5 years.
3. Full transcripts of the student’s complete university education showing all courses in psychology, education, and related disciplines.
4. At least two (2) letters of recommendation addressing both the candidate’s academic record and potential for professional practice in psychology.
5. A statement of experience, career plans, and program appropriateness.
6. A curriculum vitae including all theses or dissertations, publications, and conference presentations, with copies of the title pages and abstracts of any theses or dissertations appended.
7. TOEFL minimum score of 577 on the paper-based test (233 on the computer-based test, or 90 on the internet-based test with each component score not less than 20) for non-Canadian students from countries where English is not the first language and who have not completed a recognized university degree taught in English.

Students will be required to provide further details in support of any request for a course exemption, (e.g., course outlines, examples of work done in the course, or a letter from the instructor or department where the material is claimed to have been covered).

Professional Accreditation

All elements of this Post-Doctoral Graduate Diploma are selected from the professional components of the Ph.D. in School/Applied Child Psychology, which is accredited in the School Psychology category by the American Psychological Association (APA). Graduates of a respecialization program are normally accorded the same recognition as graduates of the accredited program.

The Ph.D. is approved by the Ordre des psychologues du Québec (OPQ) which has recommended the final stage of professional recognition to the Office des professions of the Government of Quebec. Once this accreditation is confirmed, however, graduates of the Post-Doctoral Graduate Diploma will not be automatically eligible for membership in the OPQ and the right to practice professional psychology in Quebec. Candidates wishing to practice in Quebec will be required to apply to the OPQ for the recognition of equivalent qualifications.

Language Requirement

Students are not required to demonstrate knowledge of a second language within this program, however any student wishing to be licensed as a professional psychologist in Quebec must have a working knowledge of French. Accreditation status may be confirmed by contacting the accrediting bodies.

Program Requirements

The program will be individually tailored to each accepted student in respect of previous studies and experience. Students will not be asked to repeat a course on a topic in which they can demonstrate a high level of competence. The following are expected to be most often required of students.

Required Courses and Clinic-based Practice (30 credits)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDPC 609</td>
<td>Psychological Testing 1</td>
</tr>
<tr>
<td>EDPC 610</td>
<td>Psychological Testing 2</td>
</tr>
<tr>
<td>EDPC 618</td>
<td>Professional Ethics and the Law</td>
</tr>
<tr>
<td>EDPC 682D1</td>
<td>Practicum: Psychological Testing</td>
</tr>
<tr>
<td>EDPC 682D2</td>
<td>Practicum: Psychological Testing</td>
</tr>
</tbody>
</table>

EDPE 619 (3) Child and Adolescent Therapy
EDPE 625 (3) Practicum 1: School Psychology
EDPE 626 (3) Practicum 2: School Psychology
EDPE 710 (3) Consultation in School Psychology
EDPE 714 (3) Models of Family Therapy

Complementary Courses – Field Placements (12 credits)
(2 days per week, one semester each; students select 2 of these 3 field experiences; placement in a school covering all grades may be applied to either EDPE 721 or EDPE 722):
EDPE 721 (6) School Psychology: Elementary
EDPE 722 (6) School Psychology: Secondary
EDPE 723 (6) School Psychology: Community

Internship (24 credits)
(1 year full-time or 2 years half-time)
EDPE 725 (12) Internship 1 - School Psychology
EDPE 726 (12) Internship 2 - School Psychology

Please see the description of the Ph.D. Educational Psychology Major in School/Applied Child Psychology for the full list of requirements from which each student’s Graduate Diploma program will be constructed.

M.E.D. EDUCATIONAL PSYCHOLOGY (NON-THESIS)

The M.Ed. degree offers educators and practicing professionals advanced professional training in areas where educational psychology can make a practical contribution to the design, delivery, and assessment of educational programs and the impact of these programs on student learning. Courses aim to promote (a) a greater understanding of human development, individual differences, and the learning process, (b) a greater understanding on classroom processes and strategies for teaching diverse learners in a variety of contexts, (c) the evaluation of student learning, teaching, programs and educational experimentation and innovation, and (d) the application of results of educational research.

The program offers the following streams of study:
EDPE 603 (3) Educational Measurement
EDPE 602 (3) Uses of Research Findings in Education
EDPE 603 (3) Educational Research and Development for Practitioners
EDPE 635 (3) Theories of Learning and Instruction

Complementary Courses (24 credits)

Learning Sciences Stream
EDPE 535 (3) Instructional Design
EDPE 550 (3) Consciousness and Virtual Reality
EDPE 555 (3) Applied Cognitive Science
EDPE 561 (3) Artificial Intelligence in Education
EDPE 635 (3) Theories of Learning and Instruction

EDPE 636 (3) Classroom Processes - Social.
EDPE 640 (3) Research in Computer Applications
EDPE 641 (3) Use of Computer in Educational Instruction
EDPE 648 (3) Instructional Psychology Seminar
EDPE 655 (3) Learning Science Research Seminar
EDPE 661 (3) Discourse Processes
EDPE 663 (3) Learning Environments and Processes
EDPE 664 (3) Expertise, Reasoning and Problem Solving
EDPE 666 (3) Foundations of Learning Science
EDPE 697 (6) Special Activity 1
EDPE 698 (6) Special Activity 2

Family Life Stream – admission to this stream is currently suspended
EDPC 501 (3) Helping Relationships
EDPC 502 (3) Group Processes and Individuals
EDPC 503 (3) Human Sexuality: Professionals
EDPC 504 (3) Practicum: Interviewing Skills
EDPC 505 (3) Crisis Intervention Processes
EDPC 507 (3) Practicum: Group Leadership Skills
EDPC 508 (3) Seminar in Special Topics
EDPC 509 (3) Individual Reading Course
EDPC 510 (3) Family Life Education and Marriage
EDPC 540 (3) Foundation of Family Life Education
EDPC 560 (3) Human Development
EDPC 564 (3) Family Communication
EDPE 595 (3) Seminar in Special Topics
EDPE 697 (6) Special Activity 1
EDPE 698 (6) Special Activity 2

Inclusive Education Stream
EDPE 595 (3) Seminar in Special Topics
EDPE 697 (6) Special Activity 1
EDPE 698 (6) Special Activity 2
EDPI 526 (3) Talented and Gifted Students
EDPI 527 (3) Creativity and its Cultivation
EDPI 536 (3) Practicum Gifted Education 1
EDPI 537 (3) Practicum Gifted Education 2
EDPI 539 (3) Field Work 1: Exceptional Students
EDPI 540 (3) Field Work 2: Exceptional Students
EDPI 628 (3) Gifted Students: Special Needs
EDPI 642 (3) Education of Learners/Special Needs 1
EDPI 643 (3) Education of Learners/Special Needs 2
EDPI 645 (3) Diagnosis and Assessment in Special Education
EDPI 654 (3) Instruction/Curriculum Adaptation
EDPI 665 (3) Research and Theory in Learning Disabilities

General Educational Psychology Stream
Courses to be taken from the list of courses in the other streams or any other 500-level or higher courses offered by the Department or with the approval of the Program Director, from other departments.

Elective Courses (12 credits)
500- or higher level courses to be taken from courses offered by the Department or with approval of the Program Director, from other departments.

M.A. (THESIS) EDUCATIONAL PSYCHOLOGY
(48 credits or 78 credits for stream in School/Applied Child Psychology)
Four streams of study lead to an M.A. with thesis in Educational Psychology. The stream for School/Applied Psychology requires 78 credits; all other streams require 48 credits.
The aim of the M.A. (Thesis) in Educational Psychology is to produce graduates who (a) are broadly trained in educational psychology, (b) have sufficient research competence to critically evaluate research in educational psychology, and to design, conduct and report empirical research, and (c) have experience in applying research methods and findings to the solution of practical problems in varied educational settings.
The program offers 4 streams:

1. **The Learning Sciences Stream** (48 credits) focuses on the study of learning as it occurs in real-world situations and ways in which learning may be facilitated in designed environments.

2. **The Health Professions Education Stream** (48 credits) focuses on research and the application of research in settings related to the health professions. Student admission and supervision is done jointly with the Centre for Medical Education, see website: www.mcgill.ca/centreformeded.

3. **The Human Development Stream** (48 credits) allows a focus on development across the life span and thus includes all developmental trajectories.

4. **The School/Applied Child Psychology Stream** (78 credits) focuses on the improvement of the educational and psychological well-being of children.

**Admission Requirements for the Learning Sciences and Health Professions Education Streams**

1. An undergraduate degree in education, psychology, or another field relevant to the proposed studies in Educational Psychology. It is recommended that some prior study of a relevant branch of psychology form part of the undergraduate training.

2. Minimum CGPA of 3.0 out of 4.0 or higher in undergraduate studies.

All applicants are expected to provide a completed application package, consisting of:

2. Two (2) official copies of all university transcripts (sent directly to the Department);
3. Three (3) letters of reference on official letterhead (sent directly to the Department);
4. Scores on the Test of English as a Foreign Language (TOEFL) (if you are an international student, sent directly to the Department);
5. A personal statement of interest: This letter should be between 1-2 pages and needs to include (a) your reasons for applying to the program, (b) your career aspirations, and (c) any information relevant to your application to which you would like to direct the attention of the admissions committee;
6. A current curriculum vitae.

*Note: Health Professions Education Applicants:*

Applicants who successfully meet the program requirements will be invited for an interview as part of the application process.


**Admission Requirements for the Human Development Stream**

1. An undergraduate degree in education, psychology, or another field relevant to the proposed studies in Educational Psychology. It is recommended that some prior study of a relevant branch of psychology form part of the undergraduate training.

2. Minimum CGPA of 3.0 out of 4.0 or higher in undergraduate studies.

All applicants are expected to provide a completed application package, consisting of:

2. Two (2) official copies of all university transcripts (sent directly to the Department);
3. Three (3) letters of reference on official letterhead (sent directly to the Department);
4. Scores on the Test of English as a Foreign Language (TOEFL) (if you are an international student, sent directly to the Department);
5. A current curriculum vitae (template available on Department website);
6. Three (3) letters of reference on official letterhead (template available on Department website);
7. Academic Checklist Form (template available on Department website);
8. Letter of intent that should be NO LONGER than 500 words and must include (a) your reasons for applying to the program, (b) your career aspirations, and (c) any other information relevant to your application to which you would like to direct the attention of the admissions committee.

For templates mentioned above, please visit the following section of the departmental website: www.mcgill.ca/edu-ecp/programs/schoolapplied/prospective.
Program Requirements

M.A. in Educational Psychology (Thesis) (48 or 78 credits)
Candidates are required to select and follow the set of courses in one of 4 streams of study, select a topic for research, and present the results of such research in the form of an acceptable thesis. All M.A. Educational Psychology candidates complete 33 credits of core required courses, and 15 credits of complementary courses for any one of the Learning Sciences Stream, Health Professions Stream, or Human Development Stream. Students completing the School/Applied Child Psychology Stream complete 45 credits (of specified courses) in addition to the 33 credits of core required courses.

Prerequisite Course (or equivalent) (all streams)
EDPE 575 (3) Educational Measurement

Required Courses (33 credits)
EDPE 605 (3) Research Methods
EDPE 676 (3) Intermediate Statistics 2
EDPE 682 (3) Univariate/Multivariate Analysis
EDPE 604 (3) Thesis 1
EDPE 607 (3) Thesis 2
EDPE 693 (3) Thesis 3
EDPE 694 (3) Thesis 4
EDPE 695 (6) Thesis 5
EDPE 696 (6) Thesis 6

Complementary Courses (15 credits)
(To be taken from one of the three following streams. Students completing the School/Applied Child Psychology Stream refer to the course list at the end.)

Learning Sciences Stream (15 credits)
6 credits from the following:
EDPE 655 (3) Learning Science Research Seminar
EDPE 666 (3) Foundations of Learning Science
and 9 credits selected from the following:
EDPE 637 (3) Issues in Health Professions Education
EDPE 648 (3) Instructional Psychology Seminar
EDPE 661 (3) Discourse Processes
EDPE 663 (3) Learning Environments and Processes
EDPE 664 (3) Expertise, Reasoning and Problem Solving
EDPE 668 (3) Advanced Seminar in Learning Sciences
EDPE 687 (3) Qualitative Methods in Educational Psychology

Health Professions Stream (15 credits)
6 credits from the following:
EDPE 637 (3) Issues in Health Professions Education
EDPE 639 (3) Practicum in Health Professions Education
or EDPH 689 (3) Teaching and Learning in Higher Education
and 9 credits selected from the following:
EDPE 555 (3) Applied Cognitive Science
EDPE 635 (3) Theories of Learning and Instruction
EDPE 648 (3) Instructional Psychology Seminar
EDPE 661 (3) Discourse Processes
EDPE 663 (3) Learning Environments and Processes
EDPE 664 (3) Expertise, Reasoning and Problem Solving
EDPE 666 (3) Foundations of Learning Science
EDPE 668 (3) Advanced Seminar in Learning Sciences
EDPE 687 (3) Qualitative Methods in Educational Psychology

or other 500-, 600-, and 700-level courses offered by the Department and with the approval of the supervisor and program director.

Human Development Stream (15 credits)
9 credits from the following:
EDPE 502 (3) Theories of Development and Disabilities
EDPE 672 (3) Human Development Seminar 1
EDPE 673 (3) Human Development Seminar 2
and 6 credits selected from the following:
EDPE 515 (3) Gender Identity Development
EDPE 616 (3) Cognitive Development
EDPE 620 (3) Developmental Psychopathology
EDPE 623 (3) Social-Emotional Development
EDPI 642 (3) Education of Learners/Special Needs 1
EDPI 643 (3) Education of Learners/Special Needs 2

Complementary Courses
(45 credits)*
EDPC 609 (3) Psychological Testing 1
EDPC 610 (3) Psychological Testing 2
EDPC 618 (3) Professional Ethics and the Law
EDPC 682D1 (3) Practicum: Psychological Testing
EDPC 682D2 (3) Practicum: Psychological Testing
EDPE 600 (3) Current Topics: Educational Psychology
EDPE 611 (3) School Psychology Seminar
EDPE 616 (3) Cognitive Development
EDPE 619 (3) Child and Adolescent Therapy
EDPE 620 (3) Developmental Psychopathology
EDPE 622 (3) Multiculturalism and Gender
EDPE 623 (3) Social-Emotional Development
EDPE 627 (3) Professional Practice of Psychology
EDPE 684** (3) Applied Multivariate Statistics
** can be replaced with the following course:
EDPE 687 (3) Qualitative Methods in Educational Psychology
EDPI 654 (3) Instruction/Curriculum Adaptation

* Note: There are no complementary courses for students in the School/Applied Child Psychology Stream.

26.5.5 Other Programs in Educational Psychology

M.A. (Non-Thesis) and Ph.D.

M.A. (NON-THESIS) EDUCATIONAL PSYCHOLOGY
The M.A. (Non-Thesis) in Educational Psychology is available only to M.A. students admitted to the study sequence leading to the Ph.D. School/Applied Child Psychology, and who wish to transfer after the first semester.

Admission Requirements
Same as M.A. (Thesis) Educational Psychology Stream in School/Applied Child Psychology.

For application information please refer to instructions listed under M.A. (Thesis) Educational Psychology Stream in School/Applied Child Psychology.

For any further information about the application process, please consult our departmental website: www.mcgill.ca/edu-ecp.

Program Requirements
Detailed program requirements for the full five-year program are listed under the Ph.D. School/Applied Child Psychology, section 26.5.2.
PH.D. IN EDUCATIONAL PSYCHOLOGY

The aim of the Ph.D. in Educational Psychology is to develop graduates who can demonstrate (a) broad scholarship in planning and implementing basic and applied research on problems of cognition, teaching, learning, and human development, (b) mastery of current theoretical issues in educational psychology and their historical development, and (c) a detailed knowledge of their selected stream. The program emphasizes the development of research skills and supports both basic and applied research pertaining to all domains of educational psychology.

The program offers 2 streams:

1. Learning Sciences Stream: The Learning Sciences Stream focuses on the study of learning as it occurs in school and in real-world situations and ways in which learning may be facilitated in designed environments.

2. Human Development Stream: The Human Development Stream allows a focus on development across the life span and thus includes all developmental trajectories. The dissertation forms a major part of the evaluation at the Ph.D. level.

Admission Requirements

All doctoral students must have a research supervisor upon entry to the program. Interested candidates should consult the Department website for a faculty list, www.mcgill.ca/edu-ecp. All applicants must have a minimum CGPA of 3.0 out of 4.0 or higher. Please note: it is essential to clearly identify your desired stream of study on your application.

There are two entry levels and patterns:

• starting at Ph.D. 2
• starting at Ph.D. 1

The specific requirements to be admitted at each level are as follows:

Ph.D. 2 Level

Applicants should hold an M.A. in Educational Psychology from McGill or a recognized equivalent degree from a program which requires a thesis, reflecting high overall standing, study within the area of proposed doctoral specialization, and evidence of research competence.

Ph.D. 1 Level

(a) Applicants should hold an M.Ed. in Educational Psychology or a master's degree in a related discipline (e.g., sociology, social work) lacking only the content in educational psychology that can be acquired within one year of full-time study. The applicant's academic record must reflect high overall standing and evidence of research competence.

or

(b) Applicants should hold a bachelor's degree in psychology, reflecting high academic standing in an Honours or Major program, and have completed an undergraduate thesis or the equivalent. (This option is rarely exercised.)

Application Package for the Learning Sciences Stream

All applicants are required to submit a completed application package consisting of:

2. Two (2) official copies of all university transcripts (sent directly to the Department);
3. Three (3) letters of reference on official letterhead (sent directly to the Department);
4. Scores on the Test of English as a Foreign Language (TOEFL) (if you are an international student, sent directly to the Department);
5. A personal statement of interest that should be between 2-3 pages and needs to include (a) your reasons for applying to the program, (b) your career aspirations, (c) any information relevant to your application to which you would like to direct the attention of the admissions committee, and (d) a statement describing your general area of research interest;
6. A current curriculum vitae;
7. A letter from the applicant's prospective supervisor agreeing to act as their Ph.D. supervisor upon admittance into the program. Candidates should consult the departmental website for a faculty list, www.mcgill.ca/edu-ecp.

For any further information about the application process, please consult our departmental website: www.mcgill.ca/edu-ecp.

Completed application packages should be sent to:
Geri Norton, Graduate Program Coordinator
Department of Educational & Counselling Psychology
Faculty of Education
McGill University
3700 McTavish Street, Room 614
Montreal, QC H3A 1Y2

Application Package for the Human Development Stream

All applicants are required to submit a completed application package consisting of:

2. Two (2) official copies of all university transcripts (sent directly to the Department);
3. Three (3) letters of reference (sent directly to the Department);
4. Scores on the Test of English as a Foreign Language (TOEFL) (if you are an international student, sent directly to the Department);
5. A current curriculum vitae listing research experience and productivity;
6. A personal statement of interest that should be between 1-2 pages and needs to include (a) your reasons for applying to the program, (b) your career aspirations, and (c) any information relevant to your application to which you would like to direct the attention of the admissions committee;
7. A Research Proposal that should be 2 pages long to demonstrate applicant's ability to develop an academic research proposal. Please note that this document will be used for evaluation purposes only;
8. A letter from the applicant's prospective supervisor agreeing to act as their Ph.D. supervisor upon admittance into the program - see departmental website for a faculty list, www.mcgill.ca/edu-ecp;
9. Applicants to the stream in Human Development are encouraged but not required to submit scores on the Graduate Record Examination (GRE) (general subject test) - see departmental website for further details, www.mcgill.ca/edu-ecp.

For any further information about the application process, please consult our departmental website: www.mcgill.ca/edu-ecp.

Completed application packages should be sent to:
Geri Norton, Graduate Program Coordinator
Department of Educational & Counselling Psychology
Faculty of Education
McGill University
3700 McTavish Street, Room 614
Montreal, QC H3A 1Y2

Requirements for the Ph.D. Educational Psychology

Differing requirements apply to both the Learning Sciences and Human Development streams and all requirements may be taken partially or wholly in the M.A. or M.Ed. with the following exceptions:
For the Learning Sciences Stream the following courses must be completed in the Ph.D.:

- EDPE 704 (3) Advanced Research Seminar 1
- EDPE 705 (3) Advanced Research Seminar 2
- EDPE 706 (3) Advanced Research Seminar 3
- EDPE 707 (3) Advanced Research Seminar 4
- EDPE 708 (0) Comprehensive Examination

For the Human Development Stream the following courses must be completed in the Ph.D.:

- EDPE 683 (3) Human Development Seminar 3
- EDPE 686 (3) Human Development Seminar 4
- EDPE 688 (3) Human Development Seminar 5
- EDPE 682 (3) Univariate/Multivariate Analysis
- EDPE 655 (3) Learning Science Research Seminar
- EDPI 756 (3) Internship/Special Needs Education

Students may replace any course for which they have equivalent background, subject to approval of Program Director.

**Required Courses and Comprehensive Examination for Both Streams (15 credits)**

- EDPE 605 (3) Research Methods
- EDPE 676 (3) Intermediate Statistics 2
- EDPE 682 (3) Univariate/Multivariate Analysis
- EDPE 684 (3) Applied Multivariate Statistics
- EDPE 687 (3) Qualitative Methods in Educational Psychology
- EDPE 708 (0) Comprehensive Examination

**Complementary Courses to be taken from one of the 2 streams described below (27 credits)**

**Learning Sciences Stream**
This Stream is oriented toward studying learning and teaching as they occur in real-world situations and the design of environments that foster meaningful learning in formal and informal contexts including schools, the workplace, online, and home. Themes explored through coursework and research include the cognitive processes and knowledge structures underlying learning and teaching, competence and performance in educationally significant domains and different populations of learners, and the trajectory of expertise development.

**Complementary Courses (27 credits)**

18 credits from:
- EDPE 655 (3) Learning Science Research Seminar
- EDPE 666 (3) Foundations of Learning Science
- EDPE 704 (3) Advanced Research Seminar 1
- EDPE 705 (3) Advanced Research Seminar 2
- EDPE 706 (3) Advanced Research Seminar 3
- EDPE 707 (3) Advanced Research Seminar 4

and 9 credits from:
- EDPE 637 (3) Issues in Health Professions Education
- EDPE 648 (3) Instructional Psychology Seminar
- EDPE 661 (3) Discourse Processes
- EDPE 663 (3) Learning Environments and Processes
- EDPE 664 (3) Expertise, Reasoning and Problem Solving
- EDPE 668 (3) Advanced Seminar in Learning Sciences

**Human Development Stream**
The Human Development Stream provides doctoral students with both psychology and education undergraduate training the opportunity to pursue an intensive research focused degree spanning all trajectories of development across the lifespan. The Stream is centered on a mentor model of supervision whereby students work closely with supervisors in a research apprenticeship to develop specialized expertise in their chosen field of study.

**Complementary Courses (27 credits)**

15 credits from:
- EDPE 502 (3) Theories of Development and Disabilities
- EDPE 672 (3) Human Development Seminar 1
- EDPE 673 (3) Human Development Seminar 2
- EDPE 683 (3) Human Development Seminar 3
- EDPE 686 (3) Human Development Seminar 4
- EDPE 515 (3) Gender Identity Development
- EDPE 616 (3) Cognitive Development
- EDPE 620 (3) Developmental Psychopathology
- EDPE 623 (3) Social-Emotional Development
- EDPI 642 (3) Education of Learners/Special Needs 1
- EDPI 643 (3) Education of Learners/Special Needs 2
- EDPI 756 (3) Internship/Special Needs Education

Or from the list of 500-, 600-, and 700-level courses offered by the Department and with the approval of the supervisor and program committee.

### 26.6 Courses

Students preparing to register should consult Class Schedule on the web at [www.mcgill.ca/student-records/register/class-schedule](http://www.mcgill.ca/student-records/register/class-schedule) for the most up-to-date list of courses available; courses may have been added, rescheduled or cancelled after this Calendar was published. Class Schedule lists courses by term and includes days, times, locations, and names of instructors.

**Single term and Multi-term Courses (D1/D2, N1/N2, J1/J2/J3)**

The same course may be available as a single term offering and also as a multi-term offering. The course content and credit weight is equivalent in all modes, the only difference being the scheduling.

**Courses with numbers ending in D1 and D2** are taught in two consecutive terms (most commonly Fall and Winter). Students must register for the same section of both the D1 and D2 components. When registering for a Fall term D1 course the student will automatically be registered for the Winter term D2 portion. No credit will be given unless both components (D1 and D2) are successfully completed in consecutive terms, e.g., Fall 2009 and Winter 2010.

**Note:** Some courses are open only to students in specific programs or concentrations. For specific program applicability consult the program profiles above. Some courses, particularly in psychological assessment, have supplementary lab fees. Details are available from the Program Coordinator (Secretary).

Some courses are offered in alternate years and others only when numbers warrant. Annual lists are available. Please consult the Department before attempting to register.

For more information on Multi-term Courses, Course Terminology, Class Schedule and Course Catalogue, see the General Information, Regulations and Research Guidelines, Graduate and Postdoctoral Studies Calendar for 2009-10.

Descriptions of courses not scheduled in 2009-10 can usually be found in the preceding Calendar.

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

★ Denotes courses taught only in alternate years.

☐ Denotes limited enrolment.

♦ Indicates that department approval/permission must be obtained by a student prior to registration.

† Denotes courses not available as Education electives.

### 26.6.1 EDPC – Ed Psych & Couns (Counselling)

**COURSES CURRENTLY SCHEDULED FOR 2009-10:**

- **EDPC 501 HELPING RELATIONSHIPS.** (3) (Offered through Continuing Education.) A course in the basic principles of human relationships and communication skills, approached from a theoretical and experimental viewpoint. An emphasis will be given to training in basic listening skills, interviewing techniques, and the interpretation of non-verbal behaviour and communication.
EDPC 502 GROUP PROCESSES AND INDIVIDUALS. (3) Offered through Continuing Education. A laboratory course in which participants observe individual dynamics within a group setting as well as understand the developmental phases of the group. Participants will be encouraged to experiment with their own behaviour, in order to increase their own awareness of functioning.

EDPC 503 HUMAN SEXUALITY: PROFESSIONALS. (3) (Summer) Historical, biological, anthropological, psychological and sociological perspectives of human sexual development. Sexual dysfunctional and approaches to sex therapy. Attitudes toward sexuality held by professional helpers relative to their implications for the learning and teaching of human sexuality and sex therapy.

EDPC 504 PRACTICUM: INTERVIEWING SKILLS. (3) Offered through Continuing Education. (Prerequisite: EDPC 501) This course will enable students to become practitioners in the field of Applied Social Sciences. Theoretical principles of the helping relationship will be applied in particular situations. Demonstration, lecture, role-playing and psychodrama techniques will be used.

EDPC 505 CRISIS INTERVENTION PROCESSES. (3) (Offered through Continuing Education.) Instruction in the skills of working with crisis situations involving persons emotionally disturbed, suicidal, or alcoholic, and those who are on drugs or experiencing emotional trauma, as well as other problems. Attention will be given to identification of referral sources and the writing of reports.

EDPC 507 PRACTICUM: GROUP LEADERSHIP SKILLS. (3) (Offered through Continuing Education.) (Prerequisite: EDPC 502) The practical aspects of group leadership, group design and planning. Candidates will set up groups, conduct such groups over a number of sessions, and assess these groups according to the theoretical models covered in the prerequisite course.

EDPC 508 SEMINAR IN SPECIAL TOPICS. (3) (Summer) (Offered through Summer Studies.) Content will vary from year to year and will be announced prior to registration. The seminar may be given by a single instructor or by a group, as the occasion warrants.

EDPC 509 INDIVIDUAL READING COURSE. (3) (Restriction: Permission of Program Director required) (By arrangement with individual instructor.)

EDPC 510 FAMILY LIFE EDUCATION AND MARRIAGE. (3) (Offered through Continuing Education.) The contribution of central concepts of psychological theories and therapeutic systems to the understanding of marriage and relationships. Special attention will be given to gender and ethnicity issues in order to increase the sensitivity of students to the issues typically confronted in the modern marriage and family.

EDPC 540 FOUNDATION OF FAMILY LIFE EDUCATION. (3) (Restriction: Not open to students who have taken EDPC 640) (Offered through Continuing Education.) An examination of the psychological and sociological foundations of family life education tracing the evolution of theory, research and practice within this domain.

EDPC 542 COUNSELLING ROLE OF THE TEACHER. (3) (Offered through Continuing Education or Summer Studies.) Theory and practice in interpersonal communication, interviewing, group dynamics, group leadership management, and referral criteria and procedures for students with developmental problems who experience trauma or crisis. Addressed primarily to elementary and secondary teachers who combine instructional responsibilities with a secondary process. Particular attention will be given to the construct of career awareness, career planning, career decision-making, and the necessary career-resilient employability skills for the school-to-work transition.

EDPC 606 THEORIES OF INTERVENTION 1. (3) Phenomenological, cognitive, behavioural and developmental theories that bear on the interventions of counsellors, psychologists, and other practitioners.

EDPC 607 THEORIES OF COUNSELLING 2. (3) (Prerequisite: EDPC 606) A detailed study of phenomenological, developmental and behavioural theories of counselling among others.

EDPC 608 GROUP COUNSELLING: THEORY. (3) Examines the theory and process of group counselling with an emphasis on skills and techniques. Particular attention will be given to the procedural aspects of organizing a group, the theory underlying certain approaches, the process, and evaluation of outcomes.

EDPC 609 PSYCHOLOGICAL TESTING 1. (3) (Prerequisite: a basic statistics course.) For Counselling Psychology and School/Applied Child Psychology students. History of psychological testing, theoretical aspects of individual and group testing, basic theories of intelligence, and ethical and legal issues in testing. An introduction to tests of intelligence (particularly the WISC-R), aptitude, personality, and interests, including issues of validity, reliability, and construction.

EDPC 610 PSYCHOLOGICAL TESTING 2. (3) (Prerequisite: EDPC 609) (Required in School/Applied Psychology. Optional in Counselling Psychology, but recommended for students specializing in school or child counselling.) Theory and interpretation of intelligence tests, particularly the Wechsler and Binet scales. Practice in writing test reports, particularly as a part of a case study. The use of intelligence test results in conjunction with other types of tests.

EDPC 615 ASSESSMENT AND DIAGNOSIS 1. (3) An introduction to differential assessment and diagnosis for counsellors in educational and mental health settings. The clinical interview, the assessment process, the DSM-IV, relevant test instruments, diagnostic procedures, and development of treatment plans will be subjects of study. Models of record keeping and referral procedures will be reviewed.

EDPC 616 INDIVIDUAL READING COURSE. (3) Candidates may, with the consent of the Department, elect this individual reading and conference course in lieu of one of the above courses.

EDPC 618 PROFESSIONAL ETHICS AND THE LAW. (3) (Restriction: For Counselling Psychology and School/Applied Child Psychology students.) Ethics in the helping professions and some of the philosophical bases for making ethics decisions. Quebec and Canadian law relative to human rights of clients; responsibilities of counselling and school psychologists toward clients and society in general.

EDPC 624 GROUP COUNSELLING: PRACTICE. (3) (Prerequisite: EDPC 608) The practical dimension of planning and designing a group. Setting up and conducting a group in a professional setting over a period of sessions and evaluating a group in terms of models studied in EDPC 608.

EDPC 662 CAREER PSYCHOLOGY. (3) Contemporary perspectives on career development, career planning and work values are reviewed. Current issues related to career development through the life stages such as personal values and aptitudes, the family and the societal content will be explored within the existing and emerging theories of vocational, developmental, and transitional psychology.

EDPC 665D1 (3), EDPC 665D2 (3) PRACTICUM. (Students must register for both EDPC 665D1 and EDPC 665D2) (No credit will be given for this course unless both EDPC 665D1 and EDPC 665D2 are successfully completed in consecutive terms) Practice in counselling interactions in preparation for internship. Developing expertise and confidence in a full range of skills to help clients make and implement self-directed choices. Emphasis on the counselor as an educational and therapeutic agent dealing with vocational, educational, and personal counselling using various intervention modes.

EDPC 667 INTERNSHIP: GENERAL 1. (6)
EDPC 670D1 (3), EDPC 670D2 (3) INTERNSHIP: GENERAL 1. (Students must register for both EDPC 670D1 and EDPC 670D2) (No credit will be given for this course unless both EDPC 670D1 and EDPC 670D2 are successfully completed in consecutive terms) (EDPC 670D1 and EDPC 670D2 together are equivalent to EDPC 679)

EDPC 680D1 (3), EDPC 680D2 (3) INTERNSHIP RESEARCH SEMINAR. (Students must register for both EDPC 680D1 and EDPC 680D2) (No credit will be given for this course unless both EDPC 680D1 and EDPC 680D2 are successfully completed in consecutive terms) Students become acquainted with current research designs in both quantitative and qualitative traditions and develop skills in both analyzing research projects and critiquing journal articles. Special emphasis is given to the application of research findings to field settings and clinical process. Lecture, discussion, workshops, and student research presentations are used.

EDPC 682PRACTICUM: PSYCHOLOGICAL TESTING. (6) Seminar and field practice in the administration and interpretation of educational and psychological tests including personality, within clinical and educational settings. Selection and evaluation of test instruments will be covered. Supervision of report writing and the ethical use of test information.

EDPC 682D1 (3), EDPC 682D2 (3) PRACTICUM: PSYCHOLOGICAL TESTING. (Prerequisite: EDPC 609.) (Restriction: Open only to students in Counselling Psychology or School/Applied Child Psychology) (Students must register for both EDPC 682D1 and EDPC 682D2) (No credit will be given for this course unless both EDPC 682D1 and EDPC 682D2 are successfully completed in consecutive terms) (EDPC 682D1 and EDPC 682D2 together are equivalent to EDPC 682) Seminar and field practice in the administration and interpretation of educational and psychological tests including personality, within clinical and educational settings. Selection and evaluation of test instruments will be covered. Supervision of report writing and the ethical use of test information.

EDPC 685 INTERNSHIP: VOCATIONAL AND REHABILITATION COUNSELLING. (6) Study, observation, and practice of specialized aspects of counselling through Faculty supervision and direction by personnel in the internship setting.

EDPC 685D1 (3), EDPC 685D2 (3) INTERNSHIP: VOCATIONAL AND REHABILITATION COUNSELLING. (Students must register for both EDPC 685D1 and EDPC 685D2) (No credit will be given for this course unless both EDPC 685D1 and EDPC 685D2 are successfully completed in consecutive terms) (EDPC 685D1 and EDPC 685D2 together are equivalent to EDPC 685) Study, observation, and practice of specialized aspects of counselling through Faculty supervision and direction by personnel in the internship setting.

EDPC 697 THESIS PREPARATION 1. (6)

EDPC 698 THESIS PREPARATION 2. (6)

EDPC 699D1 (6), EDPC 699D2 (6) THESIS PREPARATION 3. (Students must register for both EDPC 699D1 and EDPC 699D2) (No credit will be given for this course unless both EDPC 699D1 and EDPC 699D2 are successfully completed in consecutive terms) (EDPC 699D1 and EDPC 699D2 together are equivalent to EDPC 699)

EDPC 701 COMPREHENSIVE EXAMINATION. (0)

EDPC 702 ASSESSMENT & DIAGNOSIS 2. (3) (Prerequisite: EDPC 615) Advanced assessment and diagnosis for psychologists.

★ EDPC 709 ADVANCED THEORIES AND MODELS. (3) (Prerequisite: EDPC 624) Further study of theories and models in counselling, their history, development, and applications.

EDPC 714 THEORY / MODELS: FAMILY THERAPY. (3) For doctoral students in Counselling and School Psychology. Theoretical and therapeutic models in family therapy, core concepts and their relevance for application, intervention strategies, the child in family context, impact on school performance.

EDPC 719 ADVANCED SMALL GROUP COUNSELLING. (3) (Prerequisite: EDPC 709) Further study of theories and models in counselling, their history, development and applications.

EDPC 720 CONSULTATION AND PROGRAM EVALUATION. (3) Review and critique of current theories of consultation and program development. Focus is on application and strategies in the consultation process.

EDPC 720D1 (3), EDPC 720D2 (3) CONSULTATION AND PROGRAM EVALUATION. (Students must register for both EDPC 720D1 and EDPC 720D2) (No credit will be given for this course unless both EDPC 720D1 and EDPC 720D2 are successfully completed in consecutive terms) (Prerequisite: EDPC 662) Review and critique of current theories of consultation and program development. Focus is on application and strategies in the consultation process.

EDPC 770 INDIVIDUAL READING COURSE. (6) Candidates may, with the consent of the Program Director, elect this individual reading and conference course.

EDPC 780 SUPERVISION. (6) (Prerequisite(s): EDPC625, EDPC 626, EDPC 782) (Restriction: For Ph.D. students in Counselling Psychology and, with permission, in School/Applied Child Psychology.) Instruction and practice in models and techniques of clinical supervision.

EDPC 782 DOCTORAL FIELD EXPERIENCE. (6) (Corequisite: EDPC 780) A 2-day/week, 2-term (minimum 500 hours) doctoral practicum integrating research, theory, and supervised practica to provide a perspective for clinical work within the field of counselling psychology. Skill development in counselling intervention, assessment, treatment plans, etc. Clientele will be individuals, families, and groups with a variety of concerns.

EDPC 782D1 (3), EDPC 782D2 (3) DOCTORAL FIELD EXPERIENCE. (Corequisite: EDPC 780D1) (Students must register for both EDPC 782D1 and EDPC 782D2) (No credit will be given for this course unless both EDPC 782D1 and EDPC 782D2 are successfully completed in consecutive terms) (EDPC 782D1 and EDPC 782D2 together are equivalent to EDPC 782) A 2-day/week, 2-term (minimum 500 hours) doctoral practicum integrating research, theory, and supervised practica to provide a perspective for clinical work within the field of counselling psychology. Skill development in counselling intervention, assessment, treatment plans, etc. Clientele will be individuals, families, and groups with a variety of concerns.

EDPC 786 PROPOSAL PREPARATION AND DEFENSE. (6) (Prerequisite(s): EDPC 697, EDPC 698, EDPC 699) Preparation and defense of a dissertation proposal that surveys relevant literature, develops a research question(s), identifies a methodology to test the question, and outlines the limitations and implications of the proposed work.

EDPC 786D1 (3), EDPC 786D2 (3) PROPOSAL PREPARATION AND DEFENSE. (Prerequisite(s): EDPC 697, EDPC 698, EDPC 699) (No credit will be given for this course unless both EDPC 786D1 and EDPC 786D2 are successfully completed in consecutive terms) (EDPC 786D1 and EDPC 786D2 together are equivalent to EDPC 786) Preparation and defense of a dissertation proposal that surveys relevant literature, develops a research question(s), identifies a methodology to test the question, and outlines the limitations and implications of the proposed work.

EDPC 795 PRE-DOCTORAL INTERNSHIP. (24) (Prerequisites: all doctoral coursework) (Note 1: Group seminar and individual conferences. May be accumulated over two years.) Supervised internship (minimum 1600 hours). Study, observation, assessment and diagnosis, and practice in counselling psychology settings.

EDPC 795D1 (12), EDPC 795D2 (12) PRE-DOCTORAL INTERNSHIP. (Students must register for both EDPC 795D1 and EDPC 795D2) (No credit will be given for this course unless both EDPC 795D1 and EDPC 795D2 are successfully completed in consecutive terms) (EDPC 795D1 and EDPC 795D2 together are equivalent to...
EDPE 795) (Prerequisites: all doctoral coursework) (Note 1: Group seminar and individual conferences. May be accumulated over two years.) Supervised internship (minimum 1600 hours). Study, observation, assessment and diagnosis, and practice in counselling psychology settings.

26.6.2 EDPE – Ed Psych & Couns (Psychology)

COURSES CURRENTLY SCHEDULED FOR 2008-09:

EDPE 502 THEORIES OF DEVELOPMENT AND DISABILITIES. (3) Developmental theory to form a foundation for scholarly, empirical, and applied work with both typical and atypical populations.

EDPE 515 GENDER IDENTITY DEVELOPMENT. (3) (Prerequisites: EDPE 208, EDPE 300 or a course in developmental psychology) (Offered through Continuing Education.) Theoretical models and empirical findings relevant to the development of gender identity. Special attention is given to the influence of peers in school settings. Psychological, physiological, parental, peer and social influences on gender identity.

EDPE 535 INSTRUCTIONAL DESIGN. (3) This course draws on the fields of learning theory, developmental psychology, and measurement to focus on the tasks of constructing instructional materials. Areas to be considered include behaviour analysis, concept formation, and test construction.

EDPE 550 CONSCIOUSNESS AND VIRTUAL REALITY. (3) (Restriction: Not open to students who have taken EDPE 650.) An exploration of the nature and role of consciousness from the virtual reality research perspective, and the implications of virtual reality and cyberspace in education.

EDPE 555 APPLIED COGNITIVE SCIENCE. (3) Examination of foundations of cognitive science including contributions by psychology, linguistics, and computer science. Consideration of theory and methodology or cognitive science in educational and instructional contexts.

EDPE 560 HUMAN DEVELOPMENT. (3) (Offered through Continuing Education.) A review of current theory and knowledge of human development through the life cycle. Particular attention is given to emotional and social development. All major age-stages are considered. Emphasis is placed on the effects of interaction between individuals of these different age groupings.

EDPE 561 ARTIFICIAL INTELLIGENCE IN EDUCATION. (3) (Restriction: Not open to students who have taken EDPE 660.) An exploration of the principles of artificial intelligence as a metaphor for understanding conventional instructional and learning-processes. Topics include expert systems, intelligent computer-assisted instruction, tutoring systems, fifth-generation languages, and logic programming (e.g. Prolog). Lectures, discussion, demonstrations, and where possible site visits and hands-on experience will be provided.

EDPE 564 FAMILY COMMUNICATION. (3) (Summer) (May be offered through Summer Studies) Family communication processes and interpersonal reactions in the context of marriage and the contemporary family will be considered. Attention will be given to role changes and the effect of crises on marital and family relationships.

EDPE 575 EDUCATIONAL MEASUREMENT. (3) (Offered through Continuing Education and Summer Studies.) Statistical measurements in education, graphs, charts, frequency distributions, central tendencies, dispersion, correlation, and sampling errors.

EDPE 595 SEMINAR IN SPECIAL TOPICS. (3) (Summer) (Restriction: Permission must be obtained from the Department before registration.) The content of the seminar will vary from year to year and will be announced prior to registration. The seminar may be given by a single instructor or by a group, as the occasion warrants.

EDPE 596 SEMINAR IN SPECIAL TOPICS. (3) (Summer) Seminar in selected topics in Educational and Counselling Psychology. The topic will vary from year and will be announced prior to registration.

EDPE 600 CURRENT TOPICS: EDUCATIONAL PSYCHOLOGY. (3) Current issues and developments and reviews of major areas in educational psychology in the context of research in the Department and the evolution of the discipline at large.

EDPE 600D1 (1.5), EDPE 600D2 (1.5) CURRENT TOPICS: EDUCATIONAL PSYCHOLOGY. (Restriction: Open to School/Applied Psychology students only.) Students must register for both EDPE 600D1 and EDPE 600D2.) (No credit will be given for this course unless both EDPE 600D1 and EDPE 600D2 are successfully completed in consecutive terms) (EDPE 600D1 and EDPE 600D2 together are equivalent to EDPE 600) Current issues and developments and reviews of major areas in educational psychology in the context of research in the Department and the evolution of the discipline at large.

EDPE 602 USES OF RESEARCH FINDINGS IN EDUCATION. (3) (Pre-/Co-requisite: EDPE 575 or equivalent.) Basic concepts of educational research for students who is likely to be a regular consumer of research but only an occasional generator of research and will be able to use common tools of information retrieval.

EDPE 603 EDUCATIONAL RESEARCH AND DEVELOPMENT FOR PRACTITIONERS. (3) (Prerequisite: EDPE 602) Emphasis on research for the student who is likely to be a regular consumer of research and will be able to use common tools of information retrieval.

EDPE 604 THESIS 1. (3) (Corequisite: EDPE 600) Literature survey and thesis planning.

EDPE 605 RESEARCH METHODS. (3) (Corequisite: EDPE 676) Research methods and designs, planning and evaluating research, relations between research and statistical designs, interdisciplinary and nonquantitative approaches, meta-analysis, and the use of computers beyond computation. Ethics, scholarly writing.

EDPE 607 THESIS 2. (3) (Corequisite: EDPE 604) Preparation of a thesis proposal.

EDPE 611 SCHOOL PSYCHOLOGY SEMINAR. (3) (Restriction: Open to School/Applied Psychology students only.) Focus on the profession and practice of school psychology. Four major areas of information within the discipline of school psychology will be addressed: history and organizational systems, psychological service delivery in educational settings, ethical and legal issues, and new trends and future developments in school psychology and training.

EDPE 616 COGNITIVE DEVELOPMENT. (3) Assessment of theories of cognitive development including Piagetian, neo-Piagetian, and information-processing approaches. Theoretical models and empirical findings, and their application to educational and other settings.

EDPE 619 CHILD AND ADOLESCENT THERAPY. (3) (Restriction: For School/Applied Child Psychology students only) Therapeutic models for individual and group interventions for children and adolescents; case histories; gender and cultural minority issues; emphasis on classical and innovative strategies and methods for school and counselling psychologists.

EDPE 620 DEVELOPMENTAL PSYCHOPATHOLOGY. (3) (Prerequisite: EDPE 615) Theory, research, and practice in developmental processes in the study of psychopathology, including aberrant behaviour in childhood, at-risk and resilient children, and mental illness.

EDPE 622 MULTICULTURALISM AND GENDER. (3) (Restriction: Open to School/Applied Child and Counselling Psychology students only) Multicultural, multilingual and gender issues as they relate to the practising school and counselling psychologist. Implications and their impact in assessment, research, training, and intervention.

EDPE 623 SOCIAL-EMOTIONAL DEVELOPMENT. (3) (Prerequisites: EDPE 615, EDPE 616 or EDPE 620) Social-emotional development including temperament, attachment, gender identity, and peer relations. Biological and environmental influences, continuity and change, and qualitative versus quantitative variables.
EDPE 625 PRACTICUM 1: SCHOOL PSYCHOLOGY. (3) (Prerequisites: EDPE 609, EDPC 610, EDPC 618, EDPI 654, EDPE 611, EDPE 616.) (Corequisites: EDPC 682, EDPE 620.) Clinic experiences (normally 8-10 hours/week) (a) conducting assessment batteries, (b) interpreting assessment findings and developing intervention plans, (c) providing remedial services for specific learning domains and practical recommendations, (d) acquiring skills in group intervention techniques. Weekly case review and student progress meetings.

EDPE 626 PRACTICUM 2: SCHOOL PSYCHOLOGY. (3) (Prerequisites: EDPE 620, EDPE 625.) (Corequisite: EDPC 662) Clinic experiences (normally 8-10 hours/week) building upon EDPE 625: (a) conducting assessment batteries, (b) interpreting assessment findings and developing intervention plans, (c) providing remedial services for specific learning domains and practical recommendations, (d) acquiring skills in group intervention techniques. Weekly case review and student progress meetings. May continue to the end of the public school year.

EDPE 627 PROFESSIONAL PRACTICE OF PSYCHOLOGY. (3) (Restriction: Open only to students in Counselling Psychology or School/Applied Child Psychology) Professional and governmental structures regulating the practice of psychology in Quebec, Canada, and North America and their relation to the work of psychologists. Required for licensing in Quebec.

EDPE 629 SCHOOL PSYCHOLOGY RESEARCH PROJECT. (6) (Prerequisites: EDPC 618, EDPE 605.) (Corequisite: EDPE 682) Open to School/Applied Child Psychology students. An individually supervised research project in school/applied child psychology.

EDPE 635 THEORIES OF LEARNING AND INSTRUCTION. (3) An analysis of the relationship between theory and research about learning and teaching from a historical perspective.

EDPE 636 CLASSROOM PROCESSES - SOCIAL. (3) Instructional or environmental effects on learning and their implications for educational practice, with particular emphasis on such topics as the social psychology of learning, family background and effects, classroom interaction, teacher impact, and ethnographic and survey approaches to their study.

EDPE 637 ISSUES IN HEALTH PROFESSIONS EDUCATION. (3) An overview of health professions education issues, including: learning and assessment in the clinical setting, medical core competencies, design, delivery and evaluation of health professions education programs, organization & management of health professions education programs and systems, organizational change and leadership, clinical reasoning and decision making, interdisciplinary education.

EDPE 639 PRACTICUM IN HEALTH PROFESSIONS EDUCATION. (3) (Restriction: Approval by instructor required for registration.) Practical exposure to teaching, learning, and evaluation in health professions education, including participant/observer experience in ambulatory clinics, inpatient settings, operating rooms, small group sessions, lectures, laboratories, and seminars. Seminars for discussion and reflection on experiences.

EDPE 640 RESEARCH IN COMPUTER APPLICATIONS. (3) Recent research findings on applications of the computer to educational and psychological issues. Research paradigms. The use of the computer as an object of research as well as a research tool in education. Future directions in research.

EDPE 648 INSTRUCTIONAL PSYCHOLOGY SEMINAR. (3) (Prerequisites: EDPE 666 and EDPE 635 or permission of instructor) Theoretical, methodological, and empirical bases of research in instructional processes.

EDPE 655 LEARNING SCIENCE RESEARCH SEMINAR. (3) (Prerequisites: EDPE 666 - Foundations of Learning Science or permission of instructor. Prerequisites cannot be taken at the same time as this course.) Restriction: The content of course is sufficiently different to benefit those students who would wish to take the course again. Seminar treating current issues in theory, research and methodology in the learning sciences.

EDPE 656 APPLIED COGNITIVE THEORY/METHODS. (3) (Prerequisites: EDPE 655 or permission of instructor) Models of knowledge representation, cognitive architectures, and cognitive processes for complex domains of performance and instruction. Methods of data collection that allow testing of models of performance and learning in such domains.

EDPE 661 DISCUSSION PROCESSES. (3) (Prerequisites: EDPE 666 or permission of the instructor) (Corequisites: EDPE 655 and EDPE 666 or permission of instructor) Structure and function of discourse processes. Topics include language acquisition, syntactic and semantic processing, text comprehension, spoken versus written discourse, classroom discourse, narrative discourse, literary discourse, computational discourse, and an overview of methods for discourse analysis.

EDPE 663 LEARNING ENVIRONMENTS AND PROCESSES. (3) (Prerequisites: EDPE 666 or equivalent of permission of instructor) (Corequisites: EDPE 655 and permission of instructor) Research on natural and designed contexts to support learning and development of expertise: social and cognitive processes underlying effective participation and learning in collaborative learning environments including those mediated by technology.

EDPE 664 EXPERTISE, REASONING AND PROBLEM SOLVING. (3) (Prerequisites: EDPE 666 or permission of the instructor) (Corequisites: EDPE 665) Current research on the development of expertise, problem solving, and reasoning in formal and informal educational settings, exploring cognitive, interpersonal, and socio-cultural dimensions. Introduction to methodologies for analyzing data related to cognitive processes.

EDPE 666 FOUNDATIONS OF LEARNING SCIENCE. (3) (Prerequisites: A 500- or 600-level graduate course in cognitive or instructional psychology or permission of instructor) An introduction to theory and research pertaining to the interdisciplinary study of the learning sciences. Focuses on cognitive-psychological and social-psychological foundations of human learning, as well as on the design of learning environments.

EDPE 668 ADVANCED SEMINAR IN LEARNING SCIENCES. (3) (Prerequisites: EDPE 666 - Foundations of Learning Science or EDPE 665 Research Methods or permission of the instructor) (Corequisites: EDPE 655 Learning Sciences Research Seminar or permission of the instructor) Critical analysis and synthesis of contemporary theoretical and empirical research in educational psychology and cognitive areas. Topics addressed for each offering may change as a function of current debates and issues in the educational literature. Examples of topics would be motivation, assessment, epistemology, self-regulated learning, and metacognition.

EDPE 670 EDUCATIONAL EVALUATION. (3) (Prerequisite: EDPE 635) Theories and models of evaluation as applied to educational programs and institutional systems.

EDPE 672 HUMAN DEVELOPMENT SEMINAR 1. (3) (Prerequisite: EDPE 502 or permission of the instructor) (Minimum Grade/Test score(s) needed is B-).) Theories and developments in the science of human development within the context of research and practice and the evolution of the field at large.

EDPE 673 HUMAN DEVELOPMENT SEMINAR 2. (3) (Prerequisite: EDPE 672 (Minimum Grade/Test score(s) needed is B-).) Continuation of theories and developments in the science of human development within the context of research and practice and evolution of the field at large.

EDPE 676 INTERMEDIATE STATISTICS 2. (3) (Prerequisite: EDPE 675 or equivalent.) Analysis of variance and covariance, fixed, random and mixed effects, crossed and nested designs; regression models. Computer data processing using existing packages.

EDPE 682 UNIVARIATE/MULTIVARIATE ANALYSIS. (3) (Prerequisite: EDPE 676) General linear model as a unified data analytic system for estimation and hypothesis testing that subsumes regression, analysis of variance, and analysis of covariance for single dependent variables. Introduction to generalizations involving multiple dependent (criterion) variables. Applications oriented toward
eduction, educational psychology and counselling psychology. Experience with data-analysis tools.

**EDPE 683 HUMAN DEVELOPMENT SEMINAR 3.** (3) (Prerequisite: EDPE 673 (Minimum Grade/Test score(s) needed is B-)) Recent developments of specific topics in human development.

**EDPE 684 APPLIED MULTIVARIATE STATISTICS.** (3) (Prerequisite: EDPE 682 or equivalent.) Principal methods, models, and hypothesis-testing procedures for the prediction and analysis of patterns, structure, and relationships in multivariate data, e.g., discriminant, principal components, canonical correlation, profile analyses, measurement models, factor and path analysis, repeated measures. Applications oriented toward education and educational and counselling psychology. Experience with data-analysis tools.

**EDPE 686 HUMAN DEVELOPMENT SEMINAR 4.** (3) (Prerequisite: EDPE 683 (Minimum Grade/Test score(s) needed is B-)) Continuation of recent developments of specific topics in human development.

**EDPE 687 QUALITATIVE METHODS IN EDUCATIONAL PSYCHOLOGY.** (3) (Prerequisites: EDPE 605 or equivalent or permission of the instructor) The logics of design and selection of phenomenology, grounded theory, ethnography, case study and mixed design methods with emphasis on data analysis in light of issues of research purpose, epistemology, reliability and validity.

**EDPE 691 READING COURSE.** (3)

**EDPE 692 READING COURSE.** (6)

**EDPE 692D1 (3), EDPE 692D2 (3) READING COURSE.** (Students must register for both EDPE 692D1 and EDPE 692D2) (No credit will be given for this course unless both EDPE 692D1 and EDPE 692D2 are successfully completed in consecutive terms) (EDPE 692D1 and EDPE 692D2 together are equivalent to EDPE 692)

**EDPE 693 THESIS 3.** (3) Thesis research under supervision of a research director.

**EDPE 694 THESIS 4.** (3) Thesis research under supervision of a research director.

**EDPE 695 THESIS 5.** (6) Thesis research under supervision of a research director.

**EDPE 695D1 (3), EDPE 695D2 (3) THESIS 5.** (Students must register for both EDPE 695D1 and EDPE 695D2) (No credit will be given for this course unless both EDPE 695D1 and EDPE 695D2 are successfully completed in consecutive terms) (EDPE 695D1 and EDPE 695D2 together are equivalent to EDPE 695) Thesis research under supervision of a research director.

**EDPE 696 THESIS 6.** (6) Thesis research under supervision of a research director.

**EDPE 696D1 (3), EDPE 696D2 (3) THESIS 6.** (Students must register for both EDPE 696D1 and EDPE 696D2) (No credit will be given for this course unless both EDPE 696D1 and EDPE 696D2 are successfully completed in consecutive terms) (EDPE 696D1 and EDPE 696D2 together are equivalent to EDPE 696) Thesis research under supervision of a research director.

**EDPE 697 SPECIAL ACTIVITY 1.** (6)

**EDPE 697D1 (3), EDPE 697D2 (3) SPECIAL ACTIVITY 1.** (Students must register for both EDPE 697D1 and EDPE 697D2) (No credit will be given for this course unless both EDPE 697D1 and EDPE 697D2 are successfully completed in consecutive terms) (EDPE 697D1 and EDPE 697D2 together are equivalent to EDPE 697)

**EDPE 698 SPECIAL ACTIVITY 2.** (6) A project relevant to improving educational practice. It may be an internship, a research project, or an innovation in teaching, supervised by the student's advisor and with the approval of the department. It is completed by the submission of a project report, monograph, or production. For M.Ed. students only.

**EDPE 698D1 (3), EDPE 698D2 (3) SPECIAL ACTIVITY 2.** (Students must register for both EDPE 698D1 and EDPE 698D2) (No credit will be given for this course unless both EDPE 698D1 and EDPE 698D2 are successfully completed in consecutive terms)

**EDPE 698D1 and EDPE 698D2 together are equivalent to EDPE 698** A project relevant to improving educational practice. It may be an internship, a research project, or an innovation in teaching, supervised by the student's advisor and with the approval of the department. It is completed by the submission of a project report, monograph, or production. For M.Ed. students only.

**EDPE 704 ADVANCED RESEARCH SEMINAR 1.** (3) (Prerequisites: EDPE 666 - Foundations of Learning Science, EDPE 655 - Learning Sciences Research Seminar) Issues in epistemology and methodology of research on human learning and instruction. Consideration of theoretical, design, and methodological approaches relevant to participants' proposed research project. Preparation for the comprehensive examination and initial doctoral research proposal.

**EDPE 705 ADVANCED RESEARCH SEMINAR 2.** (3) (Prerequisites: EDPE 666 - Foundations of Learning Sciences EDPE 655 - Learning Sciences Research Seminar EDPE 704 - Advanced Research Seminar 1) (Restrictions: Open to doctoral students only) Continuation of Advanced Research Seminar 1.

**EDPE 706 ADVANCED RESEARCH SEMINAR 3.** (3) (Prerequisites: EDPE 666 - Foundations of Learning Sciences, EDPE 655 - Learning Sciences Research Seminar, EDPE 704 - Advanced Research Seminar 1, EDPE 705 - Advanced Research Seminar 2) (Restrictions: Open to doctoral students only) Continuation of Advanced Research Seminar 3.

**EDPE 707 ADVANCED RESEARCH SEMINAR 4.** (3) (Prerequisites: EDPE 666 - Foundations of Learning Sciences, EDPE 655 - Learning Sciences Research Seminar, EDPE 704 - Advanced Research Seminar 1, EDPE 705 - Advanced Research Seminar 2, EDPE 706 - Advanced Research Seminar 3) (Restrictions: Open to doctoral students only) Continuation of Advanced Research Seminar 3.

**EDPE 708 COMPREHENSIVE EXAMINATION.** (0) A four-part evaluation which is normally taken at the end of the Ph.D. 2 year. A detailed description of the examination is provided to all students.

**EDPE 708D1 (0), EDPE 708D2 (0) COMPREHENSIVE EXAMINATION.** (Students must register for both EDPE 708D1 and EDPE 708D2) (No credit will be given for this course unless both EDPE 708D1 and EDPE 708D2 are successfully completed in consecutive terms) (EDPE 708D1 and EDPE 708D2 together are equivalent to EDPE 708) A four-part evaluation which is normally taken at the end of the Ph.D. 2 year. A detailed description of the examination is provided to all students.

**EDPE 710 CONSULTATION IN SCHOOL PSYCHOLOGY.** (3) (Corequisites: EDPE 625, EDPE 626 or equivalent.) Open only to students in School/Applied Child Psychology and with permission, Counseling Psychology and Special Populations Major. A clinical course on the use of consultation in educational and school-related settings. Topics include: consultation theory, the process of evaluations of the consultation process and outcomes, critical study of relevant research and practice. Includes problem identification, problem analysis, treatment implementation, and treatment evaluation of one case.

**EDPE 712 NEUROLOGICAL BASES OF BEHAVIOUR.** (3) Development of human brain structure and function related to sensory, motor, emotional, perceptual, cognitive, and linguistics skills. Neuroanatomy and neurophysiology relevant to neuropsychological function, dysfunction, rehabilitation. Psychopharmacological influences.

**EDPE 721 SCHOOL PSYCHOLOGY: ELEMENTARY.** (6) (Prerequisite: EDPE 626) Open only to Ph.D. students in School/Applied Child Psychology. Field experience. Two days or 16 hours per week supervised by faculty members and a field supervisor in a school providing elementary education. Weekly class meetings. Students must also register for either EDPE 722 or EDPE 723 in the same academic year.

**EDPE 721D1 (3), EDPE 721D2 (3) SCHOOL PSYCHOLOGY: ELEMENTARY.** (Prerequisite: EDPE 626) (Students must register for both EDPE 721D1 and EDPE 721D2) (No credit will be given for this course unless both EDPE 721D1 and EDPE 721D2 are
successfully completed in consecutive terms) (EDPE 721D and EDPE 722D together are equivalent to EDPE 721) Open only to Ph.D. students in School/Applied Child Psychology. Field experience. Two days or 16 hours per week supervised by faculty members and a field supervisor in a school providing elementary education. Weekly class meetings. Students must also register for either EDPE 722 or EDPE 723 in the same academic year.

EDPE 722 SCHOOL PSYCHOLOGY: SECONDARY. (6) (Prerequisite: EDPE 626) Open only to Ph.D. students in School/Applied Child Psychology. Field experience. Two days or 16 hours per week supervised by faculty members and a field supervisor in a school providing secondary education. Weekly class meetings. Students must also register for either EDPE 721 or EDPE 723 in the same academic year.

EDPE 722D1, EDPE 722D2 (3) SCHOOL PSYCHOLOGY: SECONDARY. (Prerequisite: EDPE 626) (Students must register for both EDPE 722D1 and EDPE 722D2) (No credit will be given for this course unless both EDPE 722D1 and EDPE 722D2 are successfully completed in consecutive terms) (EDPE 722D1 and EDPE 722D2 together are equivalent to EDPE 722) Open only to Ph.D. students in School/Applied Child Psychology. Field experience. Two days or 16 hours per week supervised by faculty members and a field supervisor in a school providing secondary education. Weekly class meetings. Students must also register for either EDPE 721 or EDPE 723 in the same academic year.

EDPE 723 SCHOOL PSYCHOLOGY: COMMUNITY. (6) (Prerequisite: EDPE 626) Open only to Ph.D. students in School/Applied Child Psychology. Field experience. Two days or 16 hours per week supervised by faculty members and a field supervisor in an educationally relevant community or institutional setting. Weekly class meetings. Students must also register for either EDPE 721 or EDPE 723 in the same academic year.

EDPE 723D1, EDPE 723D2 (3) SCHOOL PSYCHOLOGY: COMMUNITY. (Prerequisite: EDPE 626) (Students must register for both EDPE 723D1 and EDPE 723D2) (No credit will be given for this course unless both EDPE 723D1 and EDPE 723D2 are successfully completed in consecutive terms) (EDPE 723D1 and EDPE 723D2 together are equivalent to EDPE 723) Open only to Ph.D. students in School/Applied Child Psychology. Field experience. Two days or 16 hours per week supervised by faculty members and a field supervisor in an educationally relevant community or institutional setting. Weekly class meetings. Students must also register for either EDPE 721 or EDPE 723 in the same academic year.

EDPE 725 INTERNSHIP 1 - SCHOOL PSYCHOLOGY. (12) (Prerequisites: EDPE 626) Open only to Ph.D. students in School/Applied Child Psychology. A 2 1/2 day, 10 to 12-month supervised internship (minimum 600 hours) including assessment and diagnosis normally in an educationally relevant community-based centre (e.g., hospital, clinic), group supervision, case discussions. May be combined with EDPE 725 in a single full-time year long internship; this full-time pattern is typical in accredited sites.

EDPE 726D1 (6), EDPE 726D2 (6) INTERNSHIP 2 - SCHOOL PSYCHOLOGY. (Prerequisites: EDPE 708 and two of EDPE 721, EDPE 722 or EDPE 723) (Students must register for both EDPE 726D1 and EDPE 726D2) (No credit will be given for this course unless both EDPE 726D1 and EDPE 726D2 are successfully completed in consecutive terms) (EDPE 726D1 and EDPE 726D2 together are equivalent to EDPE 726) Open only to Ph.D. students in School/Applied Child Psychology. A 2 1/2 day, 10 to 12-month supervised internship (minimum 600 hours) including assessment and diagnosis normally in an educationally relevant community-based centre (e.g., hospital, clinic), group supervision, case discussions. May be combined with EDPE 726 in a single full-time year long internship; this full-time pattern is typical in accredited sites.

26.6.3 EDPH – Ed Psych & Couns (Collegial)

COURSES CURRENTLY SCHEDULED FOR 2009-10:
EDPH 689 Teaching and Learning in Higher Education. (3) Students will develop an understanding of teaching and learning as a process in which learning is based on the learning to be accomplished. Students will design, develop, and evaluate a university course of their choice, and will develop facility and confidence in using teaching methods appropriate to their domains.

26.6.4 EDPI – Ed Psych & Couns (Inclusive)

COURSES CURRENTLY SCHEDULED FOR 2009-10:
EDPI 526 Talented and Gifted Students. (3) (Offered through Continuing Education.) The psychology and education of exceptionally able children. Definitions, assessment, classroom adaptations, technology, educational programs and educational issues. The course combines theoretical background and practical concerns. Application component: application of teaching methods with exceptionally able students.

EDPI 527 Creativity and its Cultivation. (3) (Offered through Continuing Education.) Recent research, theory, and educational practice concerning creativity, with special attention to creativity in students and educational settings.

EDPI 539 Field Work 1: Exceptional Students. (3) (Restriction: Permission of Program Director required.) Supervised experience with exceptional students in an approved educational setting.

EDPI 540 Field Work 2: Exceptional Students. (3) (Prerequisite: EDPI 539) (Restriction: Permission of Program Director required.) Supervised experience with exceptional students in an approved educational setting.

EDPI 543 Family, School and Community. (3) (Offered through Summer Studies and Continuing Education.) Examination of family, school, community and societal influences on student growth, development and adjustment. Emphasis on family perspectives, school orientation, community services, and community collaboration. Application component: using knowledge and skills in the field.

EDPI 616 Individual Reading Course. (3) Reading Course.

EDPI 642 Education of Learners/Special Needs 1. (3) Introduction to learners with different types of special needs. Emphasis on current research and practice of educating students with special needs.

EDPI 643 Education of Learners/Special Needs 2. (3) Contemporary issues in the education of students with special needs: assessment and identification; service delivery models; instructional methods; parent/professional relationships; research priorities; legislative policies; adult education; employment training.
EDPI 645 Diagnosis and Assessment in Special Education. (3) Purposes of diagnosis and assessment; formal and informal assessment procedures; issues in traditional testing procedures; emerging trends in assessment.

EDPI 654 Instruction/Curriculum Adaptation. (3) Adapting instruction and curriculum for students with special needs; developing individualized programs and methods; building curriculum that addresses both academic and social needs of students.

EDPI 656 Clinic Practicum in Special Education. (6) Participation as a special education professional in a field setting. Opportunity to plan, implement and evaluate curriculum for students with special needs, and participate as a team member.

EDPI 656D1 (3), EDPI 656D2 (3) Clinic Practicum in Special Education. (Students must register for both EDPI 656D1 and EDPI 656D2) (No credit will be given for this course unless both EDPI 656D1 and EDPI 656D2 are successfully completed in consecutive terms) (EDPI 656D1 and EDPI 656D2 together are equivalent to EDPI 656) Participation as a special education professional in a field setting. Opportunity to plan, implement and evaluate curriculum for students with special needs, and participate as a team member.

EDPI 665 Research and Theory in Learning Disabilities. (3) Review of recent research and literature in the field of learning disabilities; examination of research and theory as it relates to current practices.

EDPI 667 Behavioural and Emotional Problems. (3) Behavioural and emotional problems examined from different psychological perspectives. Theoretical issues and behaviour management applications in educational settings.

EDPI 680 Selected Topics in Special Education 1. (3) A detailed examination of recent developments in specific topics of special education. The content of the seminar will vary from year to year and will be announced prior to registration.

EDPI 743 Seminar on Special Needs. (3) (Prerequisite: EDPI 643) Contemporary issues in the education of students with special needs. Professional and research issues.

EDPI 743D1 (1.5), EDPI 743D2 (1.5) Seminar on Special Needs. (Students must register for both EDPI 743D1 and EDPI 743D2) (No credit will be given for this course unless both EDPI 743D1 and EDPI 743D2 are successfully completed in consecutive terms) (EDPI 743D1 and EDPI 743D2 together are equivalent to EDPI 743) Contemporary issues in the education of students with special needs. Professional and research issues.

EDPI 756 Internship/Special Needs Education. (3) (Prerequisite: EDPI 656) Supervised internship in special needs education in a field setting tailored to the needs and interests of individual students.

EDPI 756D1 (1.5), EDPI 756D2 (1.5) Internship/Special Needs Education. (Students must register for both EDPI 756D1 and EDPI 756D2) (No credit will be given for this course unless both EDPI 756D1 and EDPI 756D2 are successfully completed in consecutive terms) (EDPI 756D1 and EDPI 756D2 together are equivalent to EDPI 756) Supervised internship in special needs education in a field setting tailored to the needs and interests of individual students.

COURSES IN OTHER DEPARTMENTS

Students are encouraged to broaden their perspectives with elective courses from elsewhere in the Faculty of Education and the University as a whole. Eligibility to enrol in a specific course should always be ascertained in advance.

Students interested in statistical models and techniques in test theory are welcome to enrol in PSYC 510 offered by the Department of Psychology.

EDPE 692 Reading Course. (6) EDPE 692D1 (3), EDPE 692D2 (3) Reading Course. (Students must register for both EDPE 692D1 and EDPE 692D2) (No credit will be given for this course unless both EDPE 692D1 and EDPE 692D2 are successfully completed in consecutive terms) (EDPE 692D1 and EDPE 692D2 together are equivalent to EDPE 692)

EDSL 630 Qualitative/Ethnographic Methods. (3) An examination of theoretical and applied issues in qualitative and ethnographic studies in second language education.

EDEC 635 Advanced Written Communication. (3) Rhetorical practices and principles that remain constant across disciplines: generating and organizing ideas; setting goals; planning; considering readers; editing and revising. Students will analyze and produce texts that use the formats, rhetorical strategies, styles, genres, and other conventions of their disciplines.

27 Electrical and Computer Engineering

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Chair — David V. Plant
Graduate Program Director — Fabrice Labeau

27.1 Staff

Emeritus Professors

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


Post-Retirement

Clifford H. Hamppness; M.Sc.(Lond.), Ph.D.(Mcg.)

Professors


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

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


Vincent Hayward; Dip.d'Eng.(ENSM, Nantes), Doc.Ing.(Orsay), Eng.

Geza Joos; B.Sc.(C'tia), M.Eng., Ph.D.(Mcg.) (CRC Chair)

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

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

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


David A. Lowther; B.Sc.(Lond.), Ph.D.(C.N.A.A.), F.C.A.E., 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.)
27.2 Programs Offered

The Department offers programs of graduate studies leading to a degree of Master of Engineering or Doctor of Philosophy. An equivalent of one (1) calendar year of full-time study is required to obtain a master’s in Engineering.

The Ph.D. program maintains a requirement of the equivalent of two (2) calendar years of full-time study besides the requirements for the master’s degree.

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.

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 foster 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 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; the 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 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 la 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. A large fraction of research funding comes from Canadian Government agencies, with the stipulation that only graduate students who are either Canadian citizens or Permanent Residents may be supported. Consequently, graduate assistantships can be offered to a very small number of international students.

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 the Fellowships and Awards website at www.mcgill.ca/gps, or
contact Graduate and Postdoctoral Studies, McGill University, James Administration Building, Room 400, 845 Sherbrooke Street West, Montreal, QC, H3A 2T5.

27.3 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. 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 equivalent to a McGill degree 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.

27.4 Application Procedures

Applications will be considered upon receipt of:
1. completed application form;
2. application fee (CAD$100);
3. two official copies of all previous and current transcripts;
4. two reference letters (sent directly by the referees);
5. Area of Research and Applicant Profile Form;
6. Proof of English Proficiency and GRE scores (if applicable).
The Department accepts most of its graduate students for September; the chance of acceptance for January is significantly lower.

Dates for Guaranteed Consideration

For dates for guaranteed consideration, please consult the following website: www.mcgill.ca/gradapplicants/programs. Then select the appropriate program.

All documents must be received by the Department’s Admissions Committee by the dates for guaranteed consideration. McGill’s online application form for graduate program candidates is available at www.mcgill.ca/gradapplicants/apply.

27.5 Program Requirements

A student may satisfy the M.Eng. degree requirements by completing one of the following options: the M.Eng. Thesis (46 credits, 47 if the multidisciplinary Computational Science and Engineering option is selected), or the 47-credit M.Eng. Project (Non-Thesis).

Students in the thesis option must carry a full load (minimum of 12 credits) during the three terms of the residency requirement. Courses must be completed with a grade of B- or better.

M.Eng. in Electrical Engineering (Thesis) (46 credits)

Complementary Courses (18 credits minimum)

At least six graduate-level courses (minimum of 18 credits), normally with a minimum of four ECSE 500- or 600-level courses.*

Thesis Component – Required (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

* 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 circumstance will more than three non-departmental courses be permitted.

Students who choose the thesis option must register for all 28 credits during the course of study.

M.Eng. Thesis - Computational Science and Engineering (CSE) Option/Concentration (47 credits)

Required Course (1 credit)
ECSE 670/D1/D2 (1) CSE Seminar

Complementary Courses (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 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 514 (3) Structural Mechanics
CIVE 572 (3) Computational Hydraulics
CIVE 603 (4) Structural Dynamics
CIVE 613 (4) Numerical Methods: Structural Engineering
COMP 505 (3) Advanced Computer Architecture
COMP 557 (3) Fundamentals of Computer Graphics
COMP 558 (3) Fundamentals of Computer Vision
COMP 567 (3) Discrete Optimization 2
COMP 621 (4) Optimizing Compilers
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 547 (3) Finite Elements in Electrical Engineering
The credits assigned to the project can vary between 11 and 20 normally with a minimum of six ECSE 500- or 600-level courses.*

At least nine graduate-level courses (minimum of 27 credits), depending on the number of course credits taken.

Students who choose the thesis option must register for all 29 credits during the course of study. Students in the thesis option must carry a full load (minimum of 12 credits) during the three terms of the residency requirement.

M.Eng. in Electrical Engineering (Project) (Non-Thesis)
(47 credits)

Non-Thesis option students have an oral presentation and two examiners grade their project. Courses must be completed with a grade of B- or better.

A part-time program is possible.

Complementary Courses (27 - 36 credits)
At least nine graduate-level courses (minimum of 27 credits), normally with a minimum of six ECSE 500- or 600-level courses.*

Project Component (11 - 20 credits)
The credits assigned to the project can vary between 11 and 20 depending on the number of course credits taken.

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

* 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.

Ph.D. Program Requirements

Required Courses (0 credits)
ECSE 701 (0) Ph.D. Qualifying Examination
ECSE 702 (0) Ph.D. Research Plan Proposal
ECSE 703 (0) Doctoral Research Seminar

To complete the doctoral program, the following requirements must be met:

a) Successful completion of the courses prescribed by the student's Supervisory Committee.

b) Passing the Ph.D. Qualifying Examination (course ECSE 701). The exam must take place within one year of admission to the doctoral program; non-compliance with this rule will result in a first failure. The contents of the Qualifying Examination are set at the Preliminary Meeting. The examiners at the Qualifying Examination include the student's Supervisory Committee together with any other examiners chosen by the committee. Successful completion of this course will award the student a PASS grade in the course ECSE 701.

c) Approval of the thesis proposal submitted by the student (course ECSE 702, Ph.D. Research Plan Proposal). Students may only register for this course upon successful completion of course ECSE 701 and it must be completed within two years of admission to the doctoral program. Non-compliance with this rule will result in a first failure. The student must present a brief written thesis proposal to the Supervisory Committee. The proposal should contain a statement of the proposed research, results already obtained, if any, and expected results. The proposal is to be received by members of the Committee in advance of its presentation. The format of the thesis proposal submission is an oral presentation of the written statement by the student and then a period in which he/she will be questioned on the proposal by the Supervisory Committee. When the proposal is accepted by the Supervisory committee, the student receives a PASS grade in the course ECSE 702.

d) Successful completion of the Research Seminar examination (course ECSE 703, Doctoral Research Seminar). Students may only register for this course upon successful completion of course ECSE 702 and it must be completed within three years of admission to the doctoral program. Non-compliance with this rule will result in a first failure. The student must first submit a written manuscript, which demonstrates the progress made towards the Ph.D. thesis, for evaluation by the members of the Ph.D. Supervisory Committee. This will be followed by an oral presentation, in the form of a research seminar, in which the student presents the research work described in the manuscript. The presentation will normally be open to the public.

e) Passing the final thesis defence as per the regulations of Graduate and Postdoctoral Studies.

27.6 Courses

Students preparing to register should consult Class Schedule on the web at www.mcgill.ca/student-records/register/class-schedule for the most up-to-date list of courses available; courses may have been added, rescheduled or cancelled after this Calendar was published. Class Schedule lists courses by term and includes days, times, locations, and names of instructors.

The course credit weight is given in parentheses after the title, along with the number of weekly contact hours (lectures, lab/tutorials) and expected hours of study, e.g., (3) (3-0-6) indicates 3 credits (3 lecture hours - no other contact hours - 6 hours of personal study).

Denotes limited enrolment

ECSE 500 MATHEMATICAL FOUNDATIONS OF SYSTEMS. (3) (3-0-6)
(Restriction: Open only to graduate students within the Faculty of Engineering.) Basic set theories and algebraic structures, linear spaces, linear mappings, topological and metric spaces, separable spaces, continuity, compactness, Lebesque measure on Euclidean spaces, measurability, Banach spaces, Hilbert spaces, linear bounded operators in Banach spaces, dual spaces, adjoint operators, the Orthogonal Projection Theorem, properties of the Fourier series, convergence in probability.
ECSE 501 Linear Systems. (3) (3-0-6) (Corequisite: ECSE 500 or permission of instructor.) Mathematical models of linear systems; fundamental solution and transition matrices, non-homogeneous linear equations, controllability and observability of linear systems; reachable subspaces, Cayley-Hamilton's Theorem, Kalman's controllability and observability rank conditions, minimal realizations, frequency response, invariant subspaces, finite and infinite horizon linear regulator problems, uniform, exponential, and input-output stability, the Lyapunov equation.

ECSE 504 Sampled Data Control. (3) (3-0-6) (Prerequisite: ECSE 504 or ECSE 306.) (Corequisites: ECSE 404 or ECSE 501.) Sampling and aliasing. Conversion of continuous-time controllers using s-to-z transformations; pre-and post-filtering. Discrete time state representation and z-transfer function of sampled linear, time-invariant systems. Correspondence between system theoretic results for continuous- and discrete-time systems. Sampled-data design, including pole placement, LQR control and model predictive control.

ECSE 505 Nonlinear Control Systems. (3) (3-0-6) (Prerequisite: ECSE 501 Basic ODE formulation of non-linear systems; structural properties; Lyapunov and LaSalle stability theory and nonlinear and multivariable controller design; input-output stability; small gain theorem, conservation, passivity; system linearization, zero and inverse dynamics and regulator design; discontinuous and sliding mode control; applications to deterministic adaptive control.

ECSE 506 Stochastic Control & Decision Theory. (3) (3-0-6) (Prerequisites: ECSE 509 and ECSE 500.) Gaussian processes and tail bounds; Bandit problems and optimal policies; Markov decision processes; dynamic programming and optimal control in discrete time; learning models control from data; the ODE method and stochastic approximation; Q-learning; approximate dynamic programming; linear stochastic systems; linear Gaussian systems; linear-quadratic control; system identification and stochastic adaptive control.

ECSE 507 Optimization and Optimal Control. (3) (3-0-6) (Prerequisites: MATH 264 or MATH 265 or MATH 248, MATH 270 or MATH 247) General introduction to optimization methods including steepest descent, conjugate gradient, Newton algorithms. Generalized matrix inverses and the least squared error problem. Introduction to constrained optimality; convexity and duality; interior point methods. Introduction to dynamic optimization; existence theory, relaxed controls, the Pontryagin Maximum Principle. Sufficiency of the Maximum Principle.

ECSE 508 Multi-Agent Systems. (3) (3-0-6) (Prerequisite: ECSE 305 or equivalent.) Introduction to game theory, strategic games, extensive form games with perfect and imperfect information, repeated games and folk theorems, cooperative game theory, introduction to mechanism design, markets and market equilibrium, pricing and resource allocation, application in telecommunication networks, applications in communication networks, stochastic games.

ECSE 509 Probability and Random Sig. 2. (3) (3-0-6) (Prerequisites: ECSE 304 and ECSE 305) Multivariate Gaussian distributions; finite-dimensional mean-square estimation (multivariate case); principal components; introduction to random processes; weak stationarity: correlation functions, spectra, linear processing and estimation; Poisson processes and Markov chains: state processes, invariant distributions; stochastic simulation.

ECSE 510 Stochastic Processes and Systems. (3) (3-0-6) (Prerequisites: ECSE 500 and ECSE 509 or equivalent.) Basic notions. Linear state space (SS) systems. Least squares estimation and prediction: conditional expectations; Orthogonal Projection Theorem. Kalman filtering; innovations; Riccati equation. ARMA and SS systems. Stationary processes; Wold decomposition; spectral factorization; Weiner filtering. The Weiner process; linear stochastic differential equations; continuous time filtering. Chapman-Kolmogorov, Fokker-Plank equations. Applications.

ECSE 511 Introduction to Digital Communication. (3) (3-1-5) (Prerequisite: ECSE 304.) (Corequisite: ECSE 509) (An advanced version of ECSE 411) (Tutorials assigned by instructor.) Amplitude and angle modulation including AM, FM, FDM and television systems; introduction to random processes; sampling and quantization, PCM systems, TDM; digital modulation techniques, Maximum-Likelihood receivers, synchronization issues; elements of information theory including information sources, source coding and channel capacity.

ECSE 512 Digital Signal Processing 1. (3) (3-1-5) (Prerequisites: ECSE 304 and ECSE 305) Review of discrete-time transforms, sampling and quantization, frequency analysis. Structures for IIR and FIR filters, coefficient quantization, roundoff noise. The DFT, its properties, frequency analysis and filtering using DFT methods, the FFT and its implementation. Multirate processing, subsampling and interpolation, oversampling techniques.

ECSE 513 Robust Control Systems. (3) (3-0-6) (Prerequisites: ECSE 304 and ECSE 500.) Feedback interconnections of LTI systems; nominal stability and performance of feedback control systems; norms of signals and systems; H2-optimal control; H-inf-imal-optimal control; uncertainty modelling for robust control; Robust closed-loop stability and performance; robust H-inf-control; robustness check using mu-analysis; robust controller design via mu-synthesis.

ECSE 514 Probabilistic Reasoning and Artificial Intelligence. (3) (3-0-6) (Prerequisites: COMP 206, COMP 360, COMP 424 or ECSE 526, and MATH 323 or ECSE 305.) (Restriction: Not open to students who have taken COMP 526.) Belief networks, utility theory, Markov decision processes, learning algorithms.

ECSE 515 Optical Fibre Communications. (3) (Prerequisite(s): ECSE 304, ECSE 305 and ECSE 571) Optical fibre communication technology and principles of optical transport: modulation formats, signal propagation and impairments in optical fibres, sources of noise, amplification and regeneration, optical signal processing technologies, system design.

ECSE 516 Hybrid Control Systems. (3) (Prerequisite(s): ECSE 500 and ECSE 501 or equivalent) (Restriction(s): Accessible only to Honours Electrical Engineering students and Graduate students in Engineering) Hybrid Control Systems specified via ODEs and automata: continuous and discrete states and dynamics; control- and autonomous discrete state switching. Regular and exotic (e.g. chaotic and Zeno) trajectories. Stability and controllability. Hybrid Maximum Principle and Hybrid Dynamic Programming; optimal control theory and computational algorithms. Engineering, industrial and aerospace examples.

ECSE 517 Neural Prosthetic Systems. (3) (Prerequisite(s): ECSE 303 or ECSE 306 and ECSE 305 or permission of instructor) (Restriction(s): Accessible only to Honours Electrical Engineering students and Graduate students in Engineering) Selected topics in bioengineering focusing on the principles of neural prosthetics systems (brain machine interfaces). Paralysis as a communication problem. Motor control theory receptive fields. Electrical properties of the central nervous system, modern measurement technologies, encoding and mutual information, statistical data analysis, decoding and thought prediction.

ECSE 518 Telecommunication Network Analysis. (3) (Prerequisites: ECSE 414 or ECSE 528 or COMP 355 and ECSE 509) (Restriction(s): Accessible only to Honours Electrical Engineering students and Graduate students in Engineering) Mathematical modeling and analysis techniques for the control and management of modern networks. Introduction to queuing networks; birth/death processes; routing optimization and fairness; multi-commodity network flow; traffic modeling; effective bandwidth and network calculus; performance modeling.

ECSE 520 Parallel Computing Systems. (3) (3-2-4) (Prerequisite: ECSE 427.) (Restriction: Credit will only be given for one of ECSE 420 and ECSE 520.) Parallel computing models: shared memory, message passing and data parallel. Single-chip multiprocessors. Techniques for designing scalable cache coherent shared memory multiprocessors. Programming shared memory and message passing systems. Multithreading and synchronization; interplay between parallel programming and architecture.
(multi-paradigm) systems. Shells and their uses in design systems. Knowledge acquisition systems.

**ECSE 559 Flexible AC Transmission Systems.** *(3) (3-0-6) (Prerequisite: ECSE 334 and ECSE 361) Operating principles of controllers of flexible AC transmission systems (FACTS). Transformer, thyristor and gate- turn- off thyristor (GTO) technologies. Modulation methods: harmonic elimination, pulse width modulation. Applications in: shunt and series advanced static VAR Controllers (ASVC), phase shifted unified power flow controllers (UPFC).*


**ECSE 565 Introduction to Power Electronics.** *(3) (3-0-6) (Prerequisite: ECSE 334) Semiconductor power switch - thyristors, GTO’s, bipolar transistors, MOSFET’s. Switch mode power amplifiers. Buck and boost principles. Modulation methods -PWM, delta, hysteresis current control. Rectifiers, inverters, choppers.

**ECSE 570 Automatic Speech Recognition.** *(3) (3-0-6) (Prerequisites: ECSE 305 and ECSE 322.) Acoustic phonetics and signal representations. Pattern classification, stochastic modelling, language modelling and search algorithms as applied to speech recognition. Techniques for robustness, integration of speech recognition with other user interface modalities, and the role of automatic speech recognition in speech understanding.

**ECSE 571 Optoelectronic Devices.** *(3) (3-0-6) (Prerequisite: ECSE 352) (Corequisite: ECSE 533) Physical basis of optoelectronic devices, including Light Emitting Diodes, semiconductor optical amplifiers, semiconductor lasers, quantum well devices, and solid state lasers. Quantitative description of detectors, optical modulation, optical logic devices, optical interconnects, and optoelectronic hardware. Throughout the course, photonic systems applications will be addressed.


**ECSE 573 Microwave Electronics.** *(3) (3-0-6) (Prerequisite: ECSE 432 or ECSE 533) Physical basis of modern microwave devices and circuits. Microwave transistors and tunnel diodes, transferred electron devices, transit time devices and infra red devices. Microwave generation and amplification, microwave FET circuits. Noise and power amplification.

**ECSE 574 CMOS Sensor Microsystems.** *(3) (3-0-6) (Prerequisite: ECSE 485) CMOS sensor microsystems, fundamentals of microfabrication, micromachining technology, recognition elements, CMOS signal detection components, and sensor system integration and packaging.

**ECSE 593 Antennas and Propagation.** *(3) (3-0-6) (Prerequisites: ECSE 303 and ECSE 352.) Fundamentals of antenna theory: sources, radiation pattern and gain. Classification of antennas. Main antenna types and their characteristics. Antenna temperature, remote sensing and radar cross-section. Self and mutual impedances. Special topics include adaptive antennas, very large array (VLA) used in radio astronomy and biomedical applications.

**ECSE 596 Optical Waveguides.** *(3) (3-0-6) (Prerequisite: ECSE 352) An in-depth analysis to guided-wave propagation. Dielectric waveguides (slab, 2D, nonlinear, spatial solitons), optical fibers (modal, dispersion relations, propagation in dispersive, nonlinear fibers, temporal solitons), beam propagation method, coupled mode theory, waveguide devices (couplers, gratings, etc.).

Selection of current research topics of interest (e.g., photonic crystals, optical signal processing, etc.).


**ECSE 608 Machine Learning.** *(4) (3-0-9) (Prerequisites: COMP 424, COMP 526 or ECSE 514, COMP 360, MATH 323 or ECSE 305.) (Restriction: Not open to students who have taken COMP 652.) An overview of state-of-the-art algorithms used in machine learning, including theoretical properties and practical applications of these algorithms.

**ECSE 609 Custom High-Performance Computing Architectures.** *(4) (3-0-9) (Prerequisites: ECSE 425 or ECSE 525, and ECSE 487 or ECSE 431.) Design of custom computer architectures for high-performance computing. Reconfigurable computing elements and systems. Mapping algorithms to hardware. High-level synthesis and CAD algorithms. Applications to computing problems in physics, chemistry, and biology.

**ECSE 610 Wireless Telecommunications.** *(4) (3-0-9) (Prerequisites: ECSE 511) An introduction to the theory and technology of wireless networks, with the emphasis on networking. Topics include channel modelling, cellularity and frequency reuse, the multiple access problem, services integration, flow control, diversity, smart antennas and aspects of wireless network management. First and second generation systems are described in detail.

**ECSE 615 Digital Signal Processing 2.** *(4) (3-0-9) (Prerequisites: ECSE 509 and ECSE 512) Filter banks, multi-rate signal processing, multi-resolution analysis and wavelets, transform coding. Second-order stochastic processes: Wold decomposition, spectral analysis, power spectral estimation and polynomials, optimum filtering and linear prediction, adaptive filtering, LMS filters, recursive least-square and transform domain techniques.

**ECSE 617 Array Signal Processing.** *(4) (3-0-9) (Prerequisites: ECSE 412 or ECSE 512, ECSE 509) Introduction to the mathematical principles of array signal processing and their applications. Conventional beamformer design, optimum array processing structures; detection and direction of arrival estimation, modern sub-space methods; adaptive array algorithms; implementation issues (matrix processing, subspace tracking, array calibration); selected applications from wireless communications, audio processing, underwater acoustics.

**ECSE 618 Haptics.** *(4) (3-0-9) (Prerequisite: Permission of instructor.) Study of touch as relevant to technological systems. Applications. Elements of anatomy, neuroanatomy, physiology, and behaviour. Technology of tactile transducers. Computational synthesis of tactile signals: Elements of contact mechanics, deformation theory and inelasticity, and computational methods to simulate those for real-time synthesis.

**ECSE 620 Information Theory and Coding.** *(4) (3-0-9) (Prerequisites: ECSE 411 or ECSE 511, and ECSE 510) Point-to-point communications: source and channel models, lossless source coding (prefix codes, Ziv-Lempel algorithm), performance limits for channel codes, source coding subject to a fidelity criterion, end-to-end performance limits. Approaching the limits: convolutional codes, linear codes. The multi-access problem: achievable rate regions, TDMA, CDMA. Secure communications.

**ECSE 621 Stat. Detection and Estimation.** *(4) (3-0-9) (Prerequisites: ECSE 411 or ECSE 511, ECSE 510) Statistical detection and estimation lies at the intersection of telecommunications, signal processing and mathematical statistics. Subjects include: hypothesis testing (Neyman-Pearson, Bayes, minimax, nuisance parameters, composite hypotheses, generalized likelihood), estimation theory (maximum-likelihood, maximum a posteriori probability, linear estimation, Cramer-Rao bounds).

ECSE 624 DATA COMPRESSION. (4) (3-0-9) (Prerequisites: ECSE 510 and ECSE 412 or ECSE 512) Theory and design of signal coding systems: Waveform characterization (speech and image waveforms), sampling (aliasing, optimal reconstruction filters), linear prediction. Scalar quantization: uniform and nonuniform, optimality, robust quantization. Differential coding, adaptive prediction, noise feedback. Run-length coding, entropy coding.

ECSE 625 TELECOMMUNICATION NETWORK DESIGN. (4) (3-0-9) (Prerequisites: ECSE 510, ECSE 528) Instruction in the design and use of algorithms for telecommunication network planning and control, with emphasis on computational efficiency. Applications include topological design, route selection, specification and configuration management of virtual sun-networks. Relevant computational techniques include steepest descent, branch-and-bound, flow deviation.

ECSE 626 STATISTICAL COMPUTER VISION. (4) (3-0-9) (Prerequisites: ECSE 529 or equivalent, ECSE 305 or equivalent.) An overview of statistical techniques as applied to computer vision and image processing. Topics include regularization, Kalman filtering, Markov-Chain Monte Carlo methods, importance sampling and particle filtering, Markov Random fields, parameter estimation, mean-field techniques, stochastic and deterministic annealing, principal and independent components analysis.

ECSE 634 ANALOG INTEGRATED CIRCUITS SIGNAL PROCESSING. (4) (3-0-9) (Prerequisites: ECSE 334, ECSE 303 or equivalent) Analog signal processing techniques for monolithic implementation. Filter approximation theory; filter realization methods; integrated filter technologies; active-RC, MOSFET-capacitor, transconductance-capacitor, switched-capacitor, switched-current; filter tuning methods. Phase-locked loops; signal conversion techniques.

ECSE 648 VLSI DESIGN. (4) (1-5-3) (Prerequisite: ECSE 548) A project course with the opportunity to apply the knowledge acquired in ECSE 548 to the design of a complete digital IC of medium complexity. Completed designs will be submitted for fabrication to the Implementation Centre of the Canadian Microelectronics Corporation. The course includes lectures on advanced topics in VLSI design.

ECSE 649 VLSI TESTING. (4) (3-0-9) (Prerequisite: B.Eng. or equivalent.) The course is to orient designers of VLSI chips and boards to think about testing problems in parallel with the design process. Consideration in structured design-for-testability is as a requirement for complex systems will be emphasized; as well as the emerging concept of built-in self-test (BIST).

ECSE 651 M.ENG. PROJECT 1. (1) (0-0-3)
ECSE 652 M.ENG. PROJECT 2. (2) (0-0-6)
ECSE 653 M.ENG. PROJECT 3. (3) (0-0-9)
ECSE 654 M.ENG. PROJECT 4. (4) (0-0-12)
ECSE 655 M.ENG. PROJECT 5. (5) (0-0-15)
ECSE 656 M.ENG. PROJECT 6. (5) (0-0-15)

ECSE 670D1 (0.5), ECSE 670D2 (0.5) COMPUTATIONAL SCIENCE ENGINEERING SEMINAR. (Restriction: This seminar course is open only to students who were admitted to the CSE Program Option.) (Students must register for both ECSE 670D1 and ECSE 670D2.) (No credit will be given for this course unless both ECSE 670D1 and ECSE 670D2 are successfully completed in consecutive terms.) Techniques and applications in computational science and engineering.

ECSE 670N1 COMPUTATIONAL SCIENCE ENGINEERING SEMINAR. (0.5) (Restriction: This seminar course is open only to students who were admitted to the CSE Program Option.) (Students must also register for ECSE 670N2.) (No credit will be given for this course unless both ECSE 670N1 and ECSE 670N2 are successfully completed in a twelve month period.) Techniques and applications in computational science and engineering.

ECSE 670N2 COMPUTATIONAL SCIENCE ENGINEERING SEMINAR. (0.5) (Prerequisite: ECSE 670N1.) (No credit will be given for this course unless both ECSE 670N1 and ECSE 670N2 are successfully completed in a twelve month period.) See ECSE 670N1 for description.


ECSE 677 EXPERIMENTAL TECHNIQUES: SOLID STATE. (4) (0-6-6) (Prerequisite: ECSE 546) Experimental project in solid state involving the following: techniques of preparation, fabrication and orientation of samples and structures for experimental study; use of special laboratory apparatus; measurement of electronic, optical and structural properties of samples and structures; evaluation of electronic behaviour and performance; interpretation of relevant physical processes and phenomena.

ECSE 678 SPECIAL TOPICS IN SOLIDS 1. (4) (3-0-9) (Prerequisite: ECSE 432) Discussion of topics in semiconductor electronics and electronic properties of materials in areas of current research to the Department.

ECSE 681 COLLOQUIUM IN ELECTRICAL ENGINEERING. (4) Directed reading, seminar and discussion course in various subjects of current interest in electrical engineering research.

ECSE 682 TOPICS IN COMPUTERS AND CIRCUITS. (4) (3-0-9)
ECSE 683 TOPICS IN VISION AND ROBOTICS. (4) (3-0-9)
ECSE 684 TOPICS: COMPUTER AIDED DESIGN. (4) (3-0-9)
ECSE 685 TOPICS IN POWER ENGINEERING. (4) (3-0-9)
ECSE 686 TOPICS: COMMUNICATIONS SYSTEMS. (4) (3-0-9)
ECSE 688 RECENT ADVANCES IN ELECTRICAL ENGINEERING 1. (4) (3-0-9) Course content suited to the area of specialization of the lecture.

ECSE 691 THESIS RESEARCH 1. (4) (3-0-9)
ECSE 692 THESIS RESEARCH 2. (4) (3-0-9)
ECSE 693 THESIS RESEARCH 3. (4) (3-0-9)
ECSE 694 THESIS RESEARCH 4. (4) (3-0-9)
ECSE 695 THESIS RESEARCH 5. (4) (3-0-9)
ECSE 696 THESIS RESEARCH 6. (4) (3-0-9)
ECSE 697 THESIS RESEARCH 7. (4) (3-0-9)
ECSE 701 PH.D. QUALIFYING EXAMINATION. (0) Oral Examination of Ph.D. student's background in defined areas.

ECSE 702 PH.D. RESEARCH PLAN PROPOSAL. (0) Definition of a plan for Ph.D. research.

ECSE 703 DOCTORAL RESEARCH SEMINAR. (0) (Prerequisite: ECSE 702.) Submission of a research manuscript and presentation of work in an accompanying seminar.
28 English

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Chair — P. Yachnin

28.1 Staff

Emeritus Professors
M.D. Bristol; A.B.(Yale), Ph.D.(Prin.)
M. Puhvel; B.A., M.A.(McG), Ph.D.(Harv.)
D. Suvin; B.A., M.Sc., Ph.D.(Zagreb), F.R.S.C.
J. Ripley; B.A., M.A.(New Br.), Ph.D.(Birm.)
M. Puhvel; B.A., M.A.(McG.), Ph.D.(Harv.)
M.D. Bristol; A.B.(Yale), Ph.D.(Prin.)

Staff

K. Norris; B.A.(Vic. (BC)), Ph.D.(Edin.)
M.A. Kilgour; B.A.(Tor.), Ph.D.(Yale)
M. Kreiswirth; B.A.(Hamilton), M.A.(Chic.), Ph.D.(Tor.)
R. Lecker; B.A., M.A., Ph.D.(York) (Greenshields Professor of English)
K. McSweeney; B.A., Ph.D.(Tor.) (Molson Professor of English)
P. Sabor; B.A.(Camb.), M.A.(Qu.), Ph.D.(Lond.) (Canada Research Chair in 18th Century Studies)
P. Yachnin; B.A.(Yale), M.Litt.(Edin.), Ph.D.(Tor.) (Tomlinson Chair in Shakespeare Studies)

Associate Professors
D.A. Bray; B.A.(McG.), Ph.D.(Edin.)
S. Carney; B.A.(Manit.) M.A.(Alta.), Ph.D.(York (Can.))
M.N. Cooke; B.A.(Qu.), M.A.(C'nell), M.A., Ph.D.(Tor.)
W. Folkner; B.A.(Calif. St.), M.A., Ph.D.(McG)
P. Gibian; B.A.(Yale), M.A.(NYU), Ph.D.(Stan.)
Y. Halevi-Wise; B.A.(Hebrew), M.A.(G'town), Ph.D.(Princ.)
D.C. Hensley; B.A., M.A.(Can.), Ph.D.(Yale)
A. Hepburn; B.A., M.A.(W. Ont.), Ph.D.(Prin.)
M. Hickman; B.A.(Brown), M.A., Ph.D.(Mich.)
B. Kaite; B.A.(C'dia), M.A.(McM.), Ph.D.(Car.)
P. Neilson; B.A.(Bishop's), M.A.(Calg.)
P. Ponech; B.A.(McG.), Ph.D.(N'western)
D. Salter; B.A.(Br. Col.), M.A., Ph.D.(Tor.)
M.W. Selkirk; B.A.(Alta), M.F.A.(III)

Assistant Professors
J. Fumo; B.A.(Mass-Amherst), M.A., Ph.D.(Prin.)
T. Heise; B.A.(Flor. St.), M.A.(Calif., Davis), Ph.D.(NYU)
H. Sykes; B.A.(McG.), M.A(Brown), Ph.D.(C'UNY)
T. Mole; B.A., M.A., Ph.D.(Bristol)
M. Morgan; B.A.(Harv.), Ph.D.(Stan.)
D. Nystrom; B.A.(Wis.), M.A., Ph.D.(Va.)
M. Popescu; B.A., M.A.(Bucharest), Ph.D.(Windsor), Ph.D.(Penn.)
F. Ritchie; B.A., M.A.(Durh.), Ph.D.(Lond.)
N. Schantz; B.A.(Stan.), M.A., Ph.D.(S. Calif.)
S. Sobek; B.A., M.Phil., M.A., Ph.D.(Camb.)
T. Sparks; B.A.(Bates College), M.A., Ph.D.(Wash.)
A. Thain; B.A.(McG), Ph.D.(Duke)

28.2 Programs Offered

Master's and Ph.D.
M.A. in English (Non-Thesis) (48 credits)

Required Courses (9 credits)
ENGL 693 (3) Research Methods
ENGL 694 (6) Bibliography Seminar

Complementary Courses (21 credits)
21 credits of Departmental seminar courses at the 500, 600 or 700 level

Project Component – Required (18 credits)
ENGL 681 (3) M.A. Research Paper Preparation 1
ENGL 682 (3) M.A. Research Paper Preparation 2
ENGL 683 (3) M.A. Research Paper Preparation 3
ENGL 684 (9) M.A. Research Paper

Ph.D. Degree

Doctoral students are expected to complete in their first year (Ph.D. 2) the two halves of the compulsory proseminar ENGL 787 (taken in the Fall term) and ENGL788 (taken in the Winter term) and four other courses, but may substitute for the two second-term courses one extended supervised research project. This course work must be chosen in order to make possible the identification of a major and a minor area of concentration. In Ph.D. 3, candidates complete a compulsory research project in the area of the dissertation and submit the dissertation proposal. The language requirement must be fulfilled before the dissertation proposal is approved.

It is the policy of the Department to urge candidates to complete the Ph.D. program within six years. A candidate intending to submit the thesis to meet the deadline for Spring Convocation must give notice of this intention before January 1. A candidate intending to meet the deadline for Fall Convocation must give such notice before May 1.

Ph.D. in English

Complementary Courses (12 credits)
four 3-credit Departmental seminars

or two 3-credit Departmental seminars and
ENGL 796 (6) Research Project

Comprehensive Component – Required (15 credits)
ENGL 787 (3) Research Seminar
ENGL 788 (3) Research Seminar 2
ENGL 797 (6) Compulsory Research Project
ENGL 798 (3) Dissertation Proposal

28.6 Courses

Students preparing to register should consult Class Schedule on the web at www.mcgill.ca/student-records/register/class-schedule for the most up-to-date list of courses available; courses may have been added, rescheduled or cancelled after this Calendar was published. Class Schedule lists courses by term and includes days, times, locations, and names of instructors.

Courses with numbers ending D1 and D2 are taught in two consecutive terms (most commonly Fall and Winter). Students must register for both the D1 and D2 components. No credit will be given unless both components (D1 and D2) are successfully completed in consecutive terms.

Note: All undergraduate courses administered by the Faculty of Arts (courses at the 100 to 500 level) have limited enrolment. The course credit weight is given in parentheses after the title.

The following is a list of all courses in English approved for offering at the graduate level. Courses at the 500 level are also open to advanced undergraduates. A maximum of two courses at the 500 level may be taken by master’s students.

ENGL 500 MIDDLE ENGLISH (3) (Winter)
ENGL 501 16TH CENTURY (3) (Winter)
ENGL 502 17TH CENTURY (3)
ENGL 503 18TH CENTURY (3) (Winter)
ENGL 504 19TH CENTURY (3) (Fall)
ENGL 505 20TH CENTURY (3) (Fall)
ENGL 516 SHAKESPEARE (3)
ENGL 525 AMERICAN LITERATURE (3) (Fall)
ENGL 527 CANADIAN LITERATURE (3) (Fall)
ENGL 528 CANADIAN LITERATURE (3) (Fall)
ENGL 529D1 (1.5), ENGL 529D2 (1.5) INTERDISCIPLINARY SEMINAR - NORTH AMERICAN STUDIES (Students must register for both ENGL 529D1 and ENGL 529D2) (No credit will be given for this course unless both ENGL 529D1 and ENGL 529D2 are successfully completed in consecutive terms) (ENGL 529D1 and ENGL 529D2 together are equivalent to ENGL 529)
ENGL 530 LITERARY FORMS (3) (Winter)
ENGL 533 LITERARY MOVEMENTS (3) (Winter)
ENGL 540 LITERARY THEORY 1. (3) (Winter)
ENGL 545 TOPICS IN LITERATURE & SOCIETY (3)
ENGL 553 OLD ENGLISH LITERATURE (3) (Winter) (Prerequisite Undergraduate): ENGL 351
ENGL 565 MEDIEVAL DRAMA WORKSHOP (3)
ENGL 566 SPECIAL STUDIES IN DRAMA 1. (3) (Winter)
ENGL 568 TOPICS IN THE DRAMATIC FORM (3)
ENGL 585 CULTURAL STUDIES: FILM (3) (Fall) Advanced study of a specific topic in film.
ENGL 586 CULTURAL STUDIES: OTHER MEDIA (3) (Fall) Advanced study of a specific topic in a medium or media other than film, such as television, advertising, radio, or the internet.
ENGL 587 THEORETICAL APPROACHES TO CULTURAL STUDIES (3) Advanced study of theoretical issues in and approaches to cultural studies.
ENGL 604 OLD ENGLISH LANGUAGE AND PROSE LITERATURE (3)
ENGL 607 MIDDLE ENGLISH LITERATURE (3) (Winter)
ENGL 608 CHAUCER 1. (3)
ENGL 609 CHAUCER 2. (3)
ENGL 615 SHAKESPEARE (3) (Winter)
ENGL 616 ELIZABETHAN AND JACOBEAN DRAMA (3)
ENGL 640 THE AMERICAN NOVEL (3)
ENGL 661 SEMINAR OF SPECIAL STUDIES (3)
ENGL 662 SEMINAR OF SPECIAL STUDIES (3)
ENGL 675 LITERARY CRITICISM (3)
ENGL 680 CANADIAN LITERATURE (3) (Winter)
ENGL 681 M.A. RESEARCH PAPER PREPARATION 1. (3)
ENGL 682 M.A. RESEARCH PAPER PREPARATION 2. (3)
ENGL 683 M.A. RESEARCH PAPER PREPARATION 3. (3)
ENGL 684 M.A. RESEARCH PAPER. (9) The writing of the research paper.
ENGL 684D1 (4.5), ENGL 684D2 (4.5) M.A. RESEARCH PAPER (Students must register for both ENGL 684D1 and ENGL 684D2) (No credit will be given for this course unless both ENGL 684D1 and ENGL 684D2 are successfully completed in consecutive terms) (ENGL 684D1 and ENGL 684D2 together are equivalent to ENGL 684) The writing of the research paper.
ENGL 687 RESEARCH SEMINAR. (3) (Fall/Winter)
ENGL 690 SEMINAR OF SPECIAL STUDIES (3)
ENGL 693 RESEARCH METHODS (3) Bibliography for the research paper proposal.
ENGL 694 BIBLIOGRAPHY SEMINAR. (6) (Fall) An introduction to research methods.

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ENGL 699 M.A. THESIS. (24)

ENGL 699D1 (12), ENGL 699D2 (12) M.A. THESIS. (Students must register for both ENGL 699D1 and ENGL 699D2) (No credit will be given for this course unless both ENGL 699D1 and ENGL 699D2 are successfully completed in consecutive terms) (ENGL 699D1 and ENGL 699D2 together are equivalent to ENGL 699)

ENGL 699J1 M.A. THESIS. (8) (Students must also register for ENGL 699J2 and ENGL 699J3) (No credit will be given for this course unless ENGL 699J1, ENGL 699J2 and ENGL 699J3 are all successfully completed in consecutive terms) (ENGL 699J1, ENGL 699J2 and ENGL 699J3 together are equivalent to ENGL 699)

ENGL 699J2 M.A. THESIS. (8) (Prerequisite: ENGL 699J1) (Students must also register for ENGL 699J3) (No credit will be given for this course unless ENGL 699J1, ENGL 699J2 and ENGL 699J3 are all successfully completed in consecutive terms) (ENGL 699J1, ENGL 699J2 and ENGL 699J3 together are equivalent to ENGL 699) See ENGL 699J1 for course description.

ENGL 699J3 M.A. THESIS. (8) (Prerequisite: ENGL 699J2) (No credit will be given for this course unless ENGL 699J1, ENGL 699J2 and ENGL 699J3 are all successfully completed in consecutive terms) (ENGL 699J1, ENGL 699J2 and ENGL 699J3 together are equivalent to ENGL 699) See ENGL 699J1 for course description.

ENGL 699N1 M.A. THESIS. (12) (Students must also register for ENGL 699N2) (No credit will be given for this course unless both ENGL 699N1 and ENGL 699N2 are successfully completed in a twelve month period) (ENGL 699N1 and ENGL 699N2 together are equivalent to ENGL 699)

ENGL 699N2 M.A. THESIS. (12) (Prerequisite: ENGL 699N1) (No credit will be given for this course unless both ENGL 699N1 and ENGL 699N2 are successfully completed in a twelve month period) (ENGL 699N1 and ENGL 699N2 together are equivalent to ENGL 699) See ENGL 699N1 for course description.

ENGL 708 STUDIES IN A LITERARY FORM. (3) (Fall)

ENGL 710 RENAISSANCE STUDIES. (3)

ENGL 714 RENAISSANCE POETRY. (3)

ENGL 716 SPECIAL STUDIES IN SHAKESPEARE. (3)

ENGL 722 MILTON. (3)

ENGL 726 NARRATIVE PROSE OF 18TH CENTURY. (3)

ENGL 730 ROMANTIC THEORY AND POETRY. (3) (Fall)

ENGL 731 19TH CENTURY STUDIES. (3)

ENGL 733 VICTORIAN NOVEL. (3) (Winter)

ENGL 734 STUDIES IN FICTION. (3) (Fall)

ENGL 736 MODERN POETRY. (3)

ENGL 757 MODERN DRAMA. (3) (Fall)

ENGL 761 20TH CENTURY NOVELISTS. (3) (Fall)

ENGL 770 STUDIES IN AMERICAN LITERATURE. (3) (Winter)

ENGL 776 FILM THEORY. (3) (Winter)

ENGL 785 STUDIES IN LITERARY THEORY. (3)

ENGL 786 RESEARCH SEMINAR. (3) (Fall/Winter)

ENGL 787 RESEARCH SEMINAR 1. (3)

ENGL 788 RESEARCH SEMINAR 2. (3)

ENGL 796 RESEARCH PROJECT. (6) (Restriction: Ph.D. Candidates)

ENGL 797 COMPELLUSORY RESEARCH PROJECT. (6) (Restriction: Ph.D. Candidates)

ENGL 798 DISSERTATION PROPOSAL. (3) (Restriction: Ph.D. Candidates)

29 Environment

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Fax: 514-398-1643

Macdonald Campus
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21,111 Lakeshore Road
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Coordinator — C. Zhu
Telephone: 514-398-2827
Fax: 514-398-1643
Email: grad.mse@mcmill.ca
Website: www.mcmill.ca/mse

Director — Marilyn Scott

29.1 Staff

Professors

P.G. Brown; B.A.(Haver.), M.A., Ph.D.(Car.) (joint appt. with Geography and Natural Resource Sciences)

C. Chapman; B.Sc., M.A., Ph.D.(Alta.) (joint appt. with Anthropology)

M. Scott; B.Sc.(New Br.), Ph.D.(McG.) (joint appt. with Institute of Parasitology)

Associate Professors

M. Badami; B.Tech., M.S.(IIT), M.E.Des.(Calg.), Ph.D.(Br. Col.) (joint appt. with School of Urban Planning)

S. de Blois; B.Sc.(Agr.(McG.), M.Sc., Ph.D.(Mont.) (joint appt. with Plant Science)

F. Fabry; B.Sc., M.Sc., Ph.D.(McG.) (joint appt. with Atmospheric and Oceanic Sciences)

G. Mikkelson; B.A.(Trinity), M.Sc., Ph.D.(Chic.) (joint appt. with Philosophy)

A. Ricciardi; B.Sc.(Agr.), M.Sc., Ph.D.(McG.) (joint appt. with Redpath Museum)


Assistant Professors

E. Bennett; B.A.(Oberlin), M.Sc., Ph.D.(Wisc.) (joint appt. with Natural Resource Sciences)

J. Ellis; B.A.(Calg.), LL.B., B.C.L.(McG.), LL.M.(Br. Col.) (joint appt. with Law)

I. Hirose; B.A., M.A.(Waseda), Ph.D.(St. And.) (joint appt. with Philosophy)

B. Leung; B.Sc.(Br. Col.), Ph.D.(Car.) (joint appt. with Biology)

R. Sengupta; B.Sc.(Bom.), M.Sc.(IIT), Ph.D.(S. Illinois) (joint appt. with Geography)

I. Vaccaro; B.A.(Barcelona), D.E.A.(Paris), M.A., Ph.D.(Wash.) (joint appt. with Anthropology)

Faculty Lecturers

G. McCourt; B.Sc., M.Sc.(Alta.), M.Sc.(McG.) (joint appt. with Philosophy)

J. Marshall; B.A.(McG.), M.A.(Tor.), Ph.D.(McG.)

29.2 Members

Agricultural Economics: P. Thomassim

Animal Science: S. Kimums

Anthropology: A. Costopulos, J. Galaty

Atmospheric and Oceanic Sciences: P. Ariya


Bioresource Engineering: S. Barrington, G. Clark, R. Kok, C. Madramootoo

Brace Centre: C. Madramootoo
Resolving environmental issues requires a dialogue between pure and applied sciences and the social sciences and humanities. The degradation of the biological and biophysical environment has roots in the structure of human societies while solutions to environmental problems impact on human livelihoods.

A number of academic departments and institutes at McGill promote graduate-level research and training on environmental topics and have faculty members whose main research interest falls in this domain. As such, environmental research is widespread throughout the McGill community. The Environment Option provides a vehicle whereby discipline-based graduate programs can easily and effectively incorporate collaborations from at least one other discipline into their research.

Goals of the Option

To provide thesis or non-thesis students in existing graduate programs with an understanding of how knowledge is transferred into action with regard to the environment; to develop an appreciation of the role of scientific, political, socio-economic, and ethical judgments in influencing that process.

To provide a forum whereby graduate students in environment throughout the University bring their disciplinary perspectives together and enrich each other's learning through structured courses, formal seminars, and informal discussions and networking.

29.3 Admission Requirements

Once accepted into a partner department, candidates will apply for admission to the Environment Option through the McGill School of Environment. Their acceptability will be based on their academic experience and performance, and availability of a potential MSE accredited supervisor or co-supervisor for their proposed research.

29.4 Program Requirements

Students admitted into the Environment Option will be supervised or co-supervised by an accredited McGill faculty member. Their advisory committee will include at least one individual from outside the home department. It is expected that the thesis, dissertation or project as well as the final seminar presentation will contain an environmental component and will include a discussion of the applied implications of the research findings. Together with the courses common to the Environment Option, specific course requirements for each program are given within the departmental listings cited below.

Program List

The Environment option is currently available with the following graduate programs:

Anthropology

M.A., see “M.A. in Anthropology (Thesis) – Environment Option/Concentration”, page 127

Atmospheric and Oceanic Sciences

M.Sc., see “M.Sc. in Atmospheric and Oceanic Sciences (Thesis) – Environment Option/Concentration”, page 142

Biology

M.Sc., see “M.Sc. in Biology – Environment Option”, page 151
Ph.D., see “Ph.D. in Biology – Environment Option”, page 152

Bioresource Engineering

M.Sc., see “M.Sc. in Bioresource Engineering (Thesis) – Environment Option”, page 159
Ph.D., see “Ph.D. in Bioresource Engineering – Environment Option”, page 161

Earth and Planetary Sciences

M.Sc., see “M.Sc. in Earth and Planetary Sciences (Thesis) – Environment Option/Concentration”, page 198
Ph.D., see “Ph.D. in Earth and Planetary Sciences – Environment Option/Concentration”, page 199

Entomology

M.Sc., see “M.Sc. in Entomology (Thesis) – Environment Option/Concentration”, page 378
Ph.D., see section “Ph.D. in Entomology – Environment Option/Concentration”

Geography

M.A., see “M.A. in Geography (Thesis) – Environment Option/Concentration”, page 252
M.Sc., see “M.Sc. in Geography (Thesis) – Environment Option/Concentration”, page 252
Ph.D., see “Ph.D. in Geography – Environment Option/Concentration”, page 254

Law

LL.M., see “Master of Laws (LL.M.); Law (Thesis) – Environment Option/Concentration”, page 305
LL.M. (Non-Thesis), see “Master of Laws (LL.M.); Law (Non-Thesis) – Environment Option/Concentration”, page 306

Medicine, Experimental

M.Sc., see “M.Sc. in Experimental Medicine (Thesis) – Environment Option/Concentration”, page 347
Ph.D., see “Ph.D. in Experimental Medicine – Environment Option/Concentration”, page 348

Microbiology

M.Sc., see “M.Sc. in Microbiology (Thesis) – Environment Option/Concentration”, page 379
Ph.D., see “Ph.D. in Microbiology – Environment Option/Concentration”, page 380

Parasitology

M.Sc., see “M.Sc. in Parasitology (Thesis) – Environment Option/Concentration”, page 402
Ph.D., see “Ph.D. in Parasitology – Environment Option/Concentration”, page 402

Philosophy

Ph.D., see “Ph.D. in Philosophy – Environment Option/Concentration”, page 410
29.5 Courses

Students preparing to register should consult Class Schedule on the web at www.mcgill.ca/student-records/register/class-schedule for the most up-to-date list of courses available; courses may have been added, rescheduled or cancelled after this Calendar was published. Class Schedule lists courses by term and includes days, times, locations, and names of instructors.

ENVR 519 GLOBAL ENVIRONMENTAL POLITICS. (3) (Prerequisite: ENVR 201 or ENVR 203 or permission of instructor) (Restrictions: Open to students in the Environment Graduate Option (available to other students with permission of instructor). (Not open to students who have taken ENVR 580 – section 001 – in Winter 2002, Fall 2003, or Fall 2004) (Note: This course has been offered three times as a Topics in Environment Course) How the problem of environmental degradation is dealt with at the international level. The scope and nature of global environmental protection issues that cross boundaries, both physical and conceptual. Actors, structures and processes of international society. Consideration of global commons and transnational resources and of environmental externalities.

ENVR 540 ECOLOGY OF SPECIES INVASIONS. (3) (3 hours lecture) (Prerequisite: BIOL 308 or permission of instructor.) (Restrictions: Not open to U1 or U2 students. Not open to students who are taking or have taken BIOL 540.) Causes and consequences of biological invasion, as well as risk assessment methods and management strategies for dealing with invasive species.

ENVR 544 ENVIRONMENTAL MEASUREMENT AND MODELLING. (3) (Prerequisites: NRSC 430 or GEOG201 or URBP 505 or permission of instructor) (Restriction: Students registered in Environment Graduate Option (or permission of instructor) Utility of geographic information systems, remote sensing and spatially-explicit modelling for environmental planning in conjunction with analytical frameworks used in the decision-making process (e.g., cost-benefit analysis, life-cycle analysis and multi-criteria decision making).

ENVR 580 TOPICS IN ENVIRONMENT 3. (3) (Prerequisite: Permission of instructor) Advanced-level seminars and discussion of interdisciplinary aspects of current problems in environment led by staff and/or special guests. This course is offered on an irregular basis.

ENVR 585 READINGS IN ENVIRONMENT 2. (3) (Prerequisites: ENVR 400 and ENVR 401, or permission of instructor) Interdisciplinary literature project/essays related to environment, enabling advanced-level study under guidance of qualified MSE staff in areas outside the scope of individual departments. Proposed topic and method of evaluation must be approved by the Associate Director one month before the beginning of term. Contact the Program Advisor for information.

ENVR 610 FOUNDATIONS OF ENVIRONMENTAL POLICY. (3) (Restriction: Enrolment in the Graduate Environment Option or enrolment in the Neotropical Environment Option (NEO) or permission of the instructor.) Analysis of current environmental policies to reveal implicit and explicit assumptions regarding scientific methods, hypothesis testing, subject/object, causality, certainty, deities, health, development, North-South concerns for resources, commons, national sovereignty, equity. Discussion of implications of such assumptions for building future environmental policies.

ENVR 611 THE ECONOMY OF NATURE. (3) (Prerequisites: For MSE graduates, ECON 230 or equivalent. For non-MSE graduates, ECON 230 or equivalent or BIOL 208 or equivalent.) (Restriction: Enrolment in the Graduate Environment Option or enrolment in the Neotropical Environment Option (NEO) or permission of the instructor.) The course focuses on the interface between the ecosystem, biodiversity and economic systems through discussion of (1) conceptual, methodological and theoretical foundations of ecological economics, (2) management incorporating changing conditions, conflicting interests and values, trade-offs and uncertainty, (3) policy applications at national and international levels and (4) case studies.

ENVR 612 TROPICAL ENVIRONMENTAL ISSUES. (3) (Course will only be offered if enrolment is five students or more. Enrolment in the Neotropical Environment Option (NEO) or permission of the instructor) Interdisciplinary seminar presenting and comparing a variety of perspectives on environmental issues in Latin America. The course focuses on how different disciplines work collaboratively toward the resolution of environmental problems. Some issues include watershed management, bioprospecting and drug discovery, indigenous knowledge and the role of institutions in protecting biodiversity.

ENVR 620 ENVIRONMENT AND HEALTH OF SPECIES. (3) (Restriction: Open to students in the Environment Option (available to other students with permission of instructor).) How major environmental problems affect the health of human and non-human species, and how environment and health interact at different spatial and temporal scales and with different components of the ecosystem. Immediate, chronic and evolutionary consequences on health. Uncertainty and causation.

ENVR 622 SUSTAINABLE LANDSCAPES. (3) (Restriction: Students registered in Environment Option, or permission of instructor.) (Note: An understanding of ecological principles is required to take this course. Comparative case studies will be used.) Tools and knowledge needed to evaluate landscapes for sustainable management. Processes that shape landscapes, consequences of alternate landscape patterns on ecological flows, implications of management choices on biodiversity and sustainability, and need for social innovations.

ENVR 630 CIVILIZATION AND ENVIRONMENT 1. (3) (Restriction: Not open to students who have taken ENVR 680 in Fall 2004 or Fall 2005.) (Note: This course is given jointly between McGill University, UQAM and Université de Montréal. Some lectures and readings will be in French. Therefore, students should be able to read preferably understand spoken French.) Civilization and its relation to life and the world, the nature of civilization and the responsibilities of citizenship. Landscape design, economic development, science and citizen experts, governance and environment, beauty.

ENVR 631 CIVILIZATION AND ENVIRONMENT 2. (3) (Prerequisite: ENVR 630 or permission of the instructor.) (Restriction: Not open to students who have taken ENVR 680 in Winter 2005 or Winter 2006.) (Note: This course is given jointly between McGill University, UQAM and Université de Montréal. Some lectures and readings will be in French. Therefore, students should be able to read and preferably understand spoken French.) Civilization and its relation to life and the world, the nature of civilization and the responsibilities of citizenship. Commercial redesign of life, power and respect, the status of civilization in alternative cosmologies, urban environmental duties, and an economy of stewardship.
ENVR 650 ENVIRONMENTAL SEMINAR 1. (1) (Restriction: Open to students registered in Environment Option.) Interdisciplinary environmental research seminars with the goals of appreciating both the breadth and interconnectedness of environmental research questions.

ENVR 651 ENVIRONMENTAL SEMINAR 2. (1) (Restriction: Open to students registered in the Environment Option.) Environmental seminars and workshops focused on critical thinking, critical review of articles, team work, effective public speaking, grantmanship.

ENVR 652 ENVIRONMENTAL SEMINAR 3. (1) (Prerequisite: ENVR 650.) (Restriction: Open to students registered in Environment Option.) Final research seminar.

ENVR 680 TOPICS IN ENVIRONMENT 4. (3) (Restriction: students taking the Neotropical Environment Option.) (Prerequisite: Permission of Instructor) Seminars and discussion of advanced, interdisciplinary aspects of current problems in environment led by staff and/or special guests.

30 Epidemiology and Biostatistics

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Chair — R. Fuhrer

30.1 Staff

Emeritus Professors
M.R. Becklake; M.B.B.Ch., M.D.(Witw.), F.R.C.P.
J.C. McDonald; M.B.B.S., M.D.(Lond.), M.Sc.(Harv.), M.R.C.P.(Lond.), F.R.C.P.(C)

Professors
M. Abrahamowicz; Ph.D.(Cracow) (James McGill Professor)
J.F. Boivin; M.D.(Laval), S.M., Sc.D.(Harv.) (on leave)
J. Brophy; B.Eng.(McG.), M.Eng., M.D.(McG.) (joint with Medicine)
E.L.F. Franco; M.P.H., Dr.P.H.(Chapel Hill) (joint with Oncology)
R. Fuhrer; B.A. (CUNY (Brooklyn Coll.)), M.Sc., Ph.D.(UCSF) (Canada Research Chair)
T.W. Gyorkos; B.Sc.(McG.), M.Sc.(Bishop’s), Ph.D.(McG.)
J.A. Hanley; B.Sc., M.Sc.(N.U.I.), Ph.D.(Wat.)
J. Heymann; B.A.(Yale), M.P.H., Ph.D.(Harv.) (joint app't. with Political Science) (Canada Research Chair)
C. Dion; M.D.(Montr.), M.P.H.(Calif.-LA), Ph.D.(McG.), F.R.C.P.(C) (James McGill Professor)
L. Joseph; M.Sc., Ph.D.(McG.)
M.S. Kramer; B.A.(Chic.), M.D.(Yale) (joint app't. with Pediatrics)
A. Lippman; B.A.(C’nell), Ph.D.(McG.)
J. McCusker; M.D.,C.M.(McG.), M.P.H., Ph.D.(Coll.)
R. Menzies; M.D.,C.M., M.Sc.(McG.) (joint app't. with Medicine)
O.S. Miettinen; M.D.(Helsinki), M.P.H., M.S., Ph.D.(Minn.)
G. Paradis; M.D.(Montr.), M.Sc.(McG.)
I.B. Pless; B.A., M.D.(W. Ontl.) (joint app't. with Pediatrics)
S.H. Shapiro B.S.(Bucknell), M.S., Ph.D.(Stan.)
S. Suissa; M.Sc.(McG.), Ph.D.(Flor.) (joint with Pediatrics)

Instructors
P. Dubé

Adjunct Professors

Dentistry: P. Allison, J. Feine;
Pediatrics: G. Dougherty, B. Foster, G. Pekeles, C. Quach-Thanh;
Family Medicine: J. Cox, T. Tannenbaum;
Dietetics and Human Nutrition: K. Gray-Donald;
Geography: N. Ross;
Kinesiology: J. Côté;
Pathology: B. Case;
Psychiatry: E. Latimer, N. Schmitz, B. Thoms

30.2 Programs Offered

The Department offers four degree programs of study: Diploma, M.Sc., Thesis), M.Sc. (Non-Thesis) and Ph.D.

Students in M.Sc. and Ph.D. degree programs may choose to study in either epidemiology or biostatistics. The differences between the programs are in the specific course requirements and the focus of the research.
30.3 Epidemiology

30.3.1 Admission Requirements

Graduate Diploma

(Applications to the Diploma program will not be accepted for the 2010-2011 academic year.)

Master’s

Applicants to the M.Sc. program must hold a bachelor’s degree in a related area, possess a reasonable level of mathematical competency and have a good knowledge of differential and integral calculus at the level of a CEGEP or first year undergraduate course.

Ph.D.

Applicants to the Ph.D. program who hold a master’s in Epidemiology are eligible for admission to the core year. Applicants with other graduate-level degrees or exceptional students without a master’s degree are also eligible and will be considered for admission to a preparatory year.

Complete details on the epidemiology programs are available on our departmental website at: www.mcgill.ca/epi-biostat-occh/grad/epidemiology/requirements.

Language Requirement

Minimum TOEFL scores required, when applicable, 100 on the internet-based test, 600 on the paper-based test, or 250 on the older computer-based test. Minimum score for IELTS: 6.5.

30.3.2 Application Procedures

Dates for Guaranteed Consideration

For dates for guaranteed consideration, please consult the following website: www.mcgill.ca/gradapplicants/programs. Then select the appropriate program.

Completed applications, with all supporting documents, must reach the Department by the dates for guaranteed consideration. Please download required documents from our website: www.mcgill.ca/epi-biostat-occh, then select the Graduate Studies tab to link to the appropriate degree program.

McGill’s online application form for graduate program candidates is available at www.mcgill.ca/gradapplicants/apply. Students who wish to apply for fellowships are advised to apply earlier than January 15. Fellowships information is available at www.mcgill.ca/gps.

30.3.3 Program Requirements

Graduate Diploma in Epidemiology (30 credits)

(Applications to the Diploma program will not be accepted for the 2010-2011 academic year.)

Required Courses (17 credits)

EPIB 601* (4) Fundamentals of Epidemiology 1
EPIB 607* (4) Inferential Statistics
EPIB 650 (9) Diploma Dissertation

* Students exempted from either of these courses must replace them with additional Complementary Course credits.

Complementary Courses (13 credits)

13 credits of course work, at the 500 level or higher, chosen in consultation with the student’s academic advisor.

M.Sc. Degrees

The Department offers two programs of study towards a M.Sc. degree: by coursework plus thesis, or coursework plus project. The same courses are available to students in both programs and both require equal intellectual and academic rigor.

Students in the thesis option complete 24 credits of coursework and submit a thesis (24 credits); students in the non-thesis program complete 42 credits of coursework and carry out a 6-credit project.

M.Sc. in Epidemiology (Thesis) (48 credits)

Required Courses (21 credits)

EPIB 601 (4) Fundamentals of Epidemiology 1
EPIB 602 (3) Fundamentals of Epidemiology 2
EPIB 603 (3) Intermediate Epidemiology
EPIB 605 (1) Practicum
EPIB 607 (4) Inferential Statistics
EPIB 613 (1) Introduction to Statistical Software
EPIB 621 (4) Data Analysis in Health Sciences
EPIB 634 (1) Data Analysis Computer Lab

Students exempted from any of the courses listed above must replace them with additional Complementary Course credits.

Complementary Courses (3 credits)

3 credits of course work, at the 500 level or higher, chosen in consultation with the student’s academic advisor or supervisor.

Thesis Component – Required (24 credits)

EPIB 690 (24) M.Sc. Thesis

M.Sc. in Epidemiology (Non-Thesis) (48 credits)

Required Courses (21 credits)

EPIB 601 (4) Fundamentals of Epidemiology 1
EPIB 602 (3) Fundamentals of Epidemiology 2
EPIB 603 (3) Intermediate Epidemiology
EPIB 605 (1) Practicum
EPIB 607 (4) Inferential Statistics
EPIB 613 (1) Introduction to Statistical Software
EPIB 621 (4) Data Analysis in Health Sciences
EPIB 634 (1) Data Analysis Computer Lab

Students exempted from any of the courses listed above must replace them with additional Complementary Course credits.

Complementary Courses (21 credits)

21 credits of course work, at the 500 level or higher, chosen in consultation with the student’s academic advisor or supervisor.

Project Component – Required (6 credits)

EPIB 630 (6) Research Project/Practicum in Epidemiology

M.Sc. in Epidemiology (Non-Thesis) – Environment Option (48 credits)

A number of departments and faculties throughout McGill University are joining with the McGill School of Environment (MSE) to provide a new Environment Option as part of a variety of existing graduate degrees.

The new Option provides students with an appreciation of the role of science in informed decision-making in the environment sector, and the influence that political, socioeconomic and ethical judgments have.

The Option also provides a forum whereby graduate students bring their disciplinary perspectives together and enrich each other’s learning through structured courses, formal seminars and informal discussions and networking.

Students that have been admitted through their home department or faculty may apply for admission to the Option.

Option requirements are consistent across academic units. The Option is coordinated by the MSE, in partnership with participating academic units.

Required Courses (27 credits)

ENVR 610 (3) Foundations of Environmental Policy
ENVR 650 (1) Environmental Seminar 1
ENVR 651 (1) Environmental Seminar 2
ENVR 652 (1) Environmental Seminar 3
EPIB 601 (4) Fundamentals of Epidemiology 1
EPIB 602 (3) Fundamentals of Epidemiology 2
EPIB 603 (3) Intermediate Epidemiology
EPIB 605 (1) Practicum
EPIB 607 (4) Inferential Statistics
EPIB 613 (1) Introduction to Statistical Software

See course descriptions in section 30.5, “Courses”. 
Ph.D. courses. This year is called the Core Year.

Students who are admitted to the Ph.D. degree program with the equivalent of an M.Sc. in epidemiology at McGill, will in their first year, be required to take, as a minimum, 15 credits of required courses:

EPIB 601 (4) Fundamentals of Epidemiology 1
EPIB 602 (3) Fundamentals of Epidemiology 2
EPIB 603 (3) Intermediate Epidemiology
EPIB 605 (1) Practicum
EPIB 607 (4) Inferential Statistics
EPIB 613 (1) Introduction to Statistical Software

EPIB 621 (4) Data Analysis in Health Sciences
EPIB 634 (1) Data Analysis Computer Lab

* If a student has not already successfully completed them or their equivalent.

THESIS
Submit a thesis judged to be an original contribution to knowledge.

30.4 Biostatistics

30.4.1 Admission Requirements
An undergraduate degree in mathematics or statistics or its equivalent (an honours degree is preferred, but not required). At least three semesters of calculus, two semesters of linear algebra, at least one, but preferably two semesters of real analysis, and a full year course/sequence in mathematical statistics preferably at an honours level, e.g., MATH 356/357. Exposure to data analysis is an asset.

M.Sc.: Students admitted into the M.Sc. program will, in general, meet the requirements above.

Ph.D.: Exceptional students without a master's degree but with the above qualifications will be considered for Ph.D. admission starting with a qualifying year.

Complete details on the biostatistics programs are available on our departmental website at: www.mcgill.ca/epi-biostat-occh/grad/biostatistics/requirements

Language Requirement
Minimum TOEFL scores required, when applicable, 100 on the internet-based test, 600 on the paper-based test, or 250 on the older computer-based test. Minimum score for IELTS: 6.5.

30.4.2 Application Procedures

Dates for Guaranteed Consideration
For dates for guaranteed consideration, please consult the following website: www.mcgill.ca/gradapplicants/programs. Then select the appropriate program.

Completed applications, with all supporting documents, must reach the Department by the dates for guaranteed consideration. Please see our website at www.mcgill.ca/epi-biostat-occh/grad/biostatistics/applying for information on required documents as well as the application deadline.

McGill's online application form for graduate program candidates is available at www.mcgill.ca/gradapplicants/apply. Students who wish to apply for fellowships are advised to apply earlier than January 15. Fellowships information is available at www.mcgill.ca/gps.

30.4.3 Program Requirements

M.Sc. Degrees
The Department offers two routes towards a M.Sc. degree: by coursework and thesis; or coursework and a project/practicum. Both require completion of a minimum of 48 credits; the second route allows for a greater breadth of topics learned through the coursework, while the thesis route allows for greater depth in a specific topic.

See course descriptions in section 30.5, "Courses".

M.Sc. in Biostatistics (Thesis) (48 credits)

Required Courses (24 credits)
BIOS 601  (4) Epidemiology: Introduction and statistical models
BIOS 602  (4) Epidemiology: Regression Models
MATH 523  (4) Generalized Linear Models
MATH 533  (4) Honours Regression and Analysis of Variance
MATH 556  (4) Mathematical Statistics 1
MATH 557  (4) Mathematical Statistics 2

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Students exempted from any of the courses listed above must replace them with additional Complementary Course credits.

**Thesis Component – Required** (24 credits)
BIOS 690 (24) M.Sc. Thesis

**M.Sc. in Biostatistics (Non-Thesis)** (48 credits)

**Required Courses** (24 credits)
BIOS 601 (4) Epidemiology: Introduction and statistical models
BIOS 602 (4) Epidemiology: Regression Models
MATH 523 (4) Generalized Linear Models
MATH 533 (4) Honours Regression and Analysis of Variance
MATH 556 (4) Mathematical Statistics 1
MATH 557 (4) Mathematical Statistics 2

Students exempted from any of the courses listed above must replace them with additional Complementary Course credits.

**Complementary Courses** (18 credits)
18 credits of course work, at the 500 level or higher, chosen in consultation with the student's academic advisor or supervisor

**Project Component – Required** (6 credits)
BIOS 630 (6) Research Project/Practicum in Biostatistics

**Ph.D. Degree in Biostatistics**
Students will study theoretical and applied statistics and related fields; the program will train them to become independent scientists able to develop and apply statistical methods in medicine and biology and make original contributions to the theoretical and scientific foundations of statistics in these disciplines. Graduates will be prepared to develop new statistical methods as needed and apply new and existing methods in a range of collaborative projects. Graduates will be able to communicate methods and results to collaborators and other audiences, and teach biostatistics to biostatistics students, students in related fields and professionals in academic and other settings.

See course descriptions in section 30.5, “Courses”.

**Required Courses** (0 credits)
BIOS 700 (0) Ph.D. Comprehensive Examination Part A
BIOS 701 (0) Ph.D. Comprehensive Examination Part B
BIOS 702 (0) Ph.D. Proposal

**Complementary Courses** (18 - 46 credits)
0 - 28 credits from the following: (if a student has not already successfully completed them or their equivalent.)
BIOS 601 (4) Epidemiology: Introduction and statistical models
BIOS 602 (4) Epidemiology: Regression Models
BIOS 624 (4) Data Analysis & Report Writing
MATH 523 (4) Generalized Linear Models
MATH 533 (4) Honours Regression and Analysis of Variance
MATH 556 (4) Mathematical Statistics 1
MATH 557 (4) Mathematical Statistics 2

AND
12 credits chosen and approved in consultation with the student's academic advisor, at the 500 level or higher, in statistics/biostatistics.

6 credits chosen and approved in consultation with the student's academic advisor, at the 500 level or higher, in related fields (e.g., epidemiology, social sciences, biomedical sciences).

**Thesis**
Submit a thesis judged to be an original contribution to knowledge.

**30.5 Courses**

Students preparing to register should consult Class Schedule on the web at www.mcgill.ca/student-records/register/class-schedule for the most up-to-date list of courses available; courses may have been added, rescheduled or cancelled after this Calendar was published. Class Schedule lists courses by term and includes days, times, locations, and names of instructors.

Information is also available on the departmental website at www.mcgill.ca/epi-biostat-occh; select Graduate Studies, then Courses & Timetables under the program of your choice.

**Courses with numbers ending D1 and D2 are taught in two consecutive terms (most commonly Fall and Winter). Students must register for both the D1 and D2 components. No credit will be given unless both components (D1 and D2) are successfully completed in consecutive terms.**

**Note:** Special students and students from other departments or universities require the permission of the course instructor.

The course credit weight is given in parenthesis after the title.

**EPIB 507 BIOSTATISTICS FOR HEALTH PROFESSIONALS.** (3) (Prerequisite(s): Permission of instructor) (Restriction(s): Restricted to students registered in Occupational Health, Dentistry, Rehabilitation Sciences, Human Nutrition, Experimental Medicine-Family Medicine Option, Medical Residents, and Clinical Fellows.) (Course not open to students registered in the Epidemiology and Biostatistics programs.) Basic principles of statistical inference applicable to clinical, epidemiologic, and other health research. Topics include: methods of describing data, statistical inference for means, statistical inference for proportions, non-parametric statistics, correlation and introduction to linear regression.

**EPIB 525 HEALTH CARE SYSTEMS IN COMPARATIVE PERSPECTIVE.** (3) (Prerequisite: Permission of instructor) (Restriction: Not open to students who are taking or have taken SOCI 525.) (Note: This course is cross-listed in Epidemiology, Biostatistics and Occupational Health and in Sociology) Comparative perspective to illustrate processes involved in the development and evolution of health care systems around the world. Countries examined will represent different welfare state regimes, health care system typologies, levels of development and wealth.

**EPIB 527 ECONOMICS FOR HEALTH SERVICES RESEARCH AND POLICY.** (3) (Note: This course is open to graduate students and advanced undergraduates from all departments, with the permission of the instructor. A background in introductory economics is useful, though not required.) Key health policy topics in developed economies using analytic frameworks and tools from economics. Major topics include health insurance, health care financing, and the roles of individuals and public and private institutions in the health care system.

**EPIB 528 ECONOMIC EVALUATION OF HEALTH PROGRAMS.** (3) (No prior background in economics is required.) (Prerequisite: Permission of instructor) (Restriction: Open to graduate students and advanced undergraduates from all departments.) Concepts and methods used to carry out economic evaluations of health programs and interventions, including public health interventions, pharmaceuticals, and other health care interventions. Includes topics such as calculation of unit costs, measurement of quality-adjusted life years (QALY’s) and assessment of uncertainty in cost-effectiveness analysis.

**EPIB 591 SPECIAL TOPICS IN EPIDEMIOLOGY.** (3) (Prerequisite: Permission of the instructor.) (Note: This course is open to graduate students and advanced undergraduates from all departments, with the permission of the instructor.) Special topics in epidemiology.

**EPIB 601 FUNDAMENTALS OF EPIDEMIOLOGY 1.** (4) (Corequisites: EPIB 602 and EPIB 607) (Restrictions: Not open to students who have taken EPIB 606. Open to students in Epidemiology or Biostatistics programs, or permission of instructor.) This course aims to provide a comprehensive introduction to epidemiologic concepts and corresponding terms. After an introduction to the history, definition, and purposes of epidemiology, "core" concepts that are relevant in several areas of investigation (e.g., etiologic research, health care research, and community medicine practice) will be presented.
EPIB 602 Fundamentals of Epidemiology 2. (3) Principles of measurement of exposures, covariates and outcomes in epidemiological research, including design and conduct of surveys; chronic and infectious disease surveillance; screening and diagnostic tests; and qualitative methods.

EPIB 603 Intermediate Epidemiology. (3) (Prerequisites: EPIB 601, EPIB 602, and EPIB 607.) Concepts and methods for epidemiology at the intermediate level, including causation, measures of disease occurrence and effect, study designs, biases in epidemiologic research, and interaction.

EPIB 605 Practicum. (1) (Prerequisites: EPIB 601 and EPIB 607.) This course gives students the opportunity to integrate knowledge from and apply principles covered in courses EPIB 601 and EPIB 607.

EPIB 607 Inferential Statistics. (4) (Prerequisite (Undergraduate): A first year course in undergraduate differential and integral calculus.) Introduction to the basic principles of statistical inference used in clinical and epidemiologic research. Topics include variability; methods of processing and describing data; sampling and sampling distributions; inferences regarding means and proportions, non-parametric methods, regression and correlation.

EPIB 608 Advanced Epidemiology. (3) (Prerequisite: Ph.D. can be approved by the instructor.) Discussion of methodologic issues in the recent literature, including causal inference, measures of disease frequency, measures of effect, epidemiologic study designs, biases, statistics in epidemiology, and special topics. Discussion of day to day practice of epidemiology. Offered in alternate years or yearly depending on demand.

EPIB 609 Seminar on Advanced Methods in Epidemiology. (3) (Prerequisites: EPIB 603 and EPIB 608 or equivalent courses or permission of instructor.) A seminar course on selected topics in advanced epidemiological methods, such as concepts of causation, causal inference and residual confounding.

EPIB 610 Advanced Methods: Causal Inference. (3) (Prerequisite(s): EPIB 608, or equivalent, or permission of instructor) (Restriction(s): Restricted to Ph.D. students in the Department of Epidemiology, Biostatistics and Occupational Health) Conceptual and methodological issues in epidemiology and biostatistics related to causal inference.

EPIB 613 Introduction to Statistical Software. (1) (Prerequisite: Enrolment in Epidemiology stream program or permission of instructor.) Introduction to statistical software and data management, including basics of entering, manipulating data and elementary statistical analysis, SAS software, with reference to other packages of potential interest to students (R, Strata, SPSS).

EPIB 615 Introduction to Infectious Disease Epidemiology. (3) (Prerequisite: EPIB 601 or Permission of Instructor.) (Note: An undergraduate-level biology course is highly recommended.) Introduction to the field of infectious disease epidemiology taught from a public health perspective. Topics include analytic methods, study design, outbreak investigations, surveillance, vaccine development and evaluation, screening, modelling, and infectious causes of cancer or chronic diseases.

EPIB 621 Data Analysis in Health Sciences. (4) (Prerequisites: EPIB 606, and EPIB 607 or permission of instructor.) Univariate and multivariate statistical techniques for continuous categorical and survival data. Topics include generalized linear models, multiple linear and logistic regression, introductory survival analysis, model selection. Maximum likelihood and Bayesian approaches will be presented.

EPIB 622 Scientific Communication. (3) (Note: Enrolment in Epidemiology Ph.D. program or permission of instructor.) This course considers principles of scientific writing and or oral communications. The components of a scientific paper are reviewed, as well as elements of style. Basic elements of oral presentation to scientific audiences will also be addressed.

EPIB 623 Research Design in Health Sciences. (3) (Prerequisite: EPIB 606.) (Restrictions: Diploma/Degree students in Epidemiology and Biostatistics) Lectures and discussions plus oral and written presentations by students, to provide guidance and experience in the development of objectives, for the formulation and constructive peer criticism of designs for research in the health sciences, including etiologic and evaluative, cross-sectional, case-reference and cohort studies.

EPIB 626 Risks and Hazards in Epidemiology. (3) (Prerequisites: EPIB 621 and EPIB 681 Classical and modern methods of analysis for survival, cohort, and case-control studies. Emphasis on the similarity of models used in the analyses of these studies. Hazard functions, Relative risk functions, Regression modelling. Likelihood function. Interpretation of statistical parameters.

EPIB 627 Analysis of Correlated Data. (3) (Prerequisites: EPIB 603, EPIB 621, EPIB 634 or permission of instructor.) This course will provide a basic introduction to methods for analysis of correlated, or dependent, data. These data arise when observations are not gathered independently; examples are longitudinal data, household data, cluster samples, etc. Basic descriptive methods and introduction to regression methods for both continuous and discrete outcomes.

EPIB 628 Measurement in Epidemiology. (3) (Prerequisites: EPIB 603 and EPIB 621 or Permission of Instructor.) This course will focus on methodological issues related to measures of health status, determinants of health status, and other relevant covariates encountered in clinical and epidemiologic research. Topics to be covered include instrument development, assessment of reliability and validity, item response theory, and latent variable-based measurement models.

EPIB 630 Research Project/Practicum in Epidemiology. (6) (Restriction: non-thesis M.Sc. students who have completed requirements) Students will critically assess research and summarize the findings in a research paper on a health related topic from an epidemiologic perspective. Topic to be approved by faculty member who will direct student and evaluate the paper.

EPIB 631 Pharmacoepidemiology 2. (2) (Offered only in Summer term.) (Prerequisites: EPIB 633, or instructor's permission, and basic knowledge of epidemiology and biostatistics) (Due to the intensive nature of this course, the standard add/drop and withdrawal deadlines do not apply. Add/drop is the first lecture day and withdrawal is the second lecture day.) An advanced course on the methodology to be used when confronted with an alleged adverse or beneficial event related to a drug, a vaccine or a biological product. It includes four parts: i) designs for etiological research; ii) surveillance (modelling, statistical appraisal); iii) hazard functions in pharmacoepidemiology; iv) exposure assessment.

EPIB 633 Pharmacoepidemiology 1. (2) (Offered only in Summer Term) (Due to the intensive nature of this course, the standard add/drop and withdrawal deadlines do not apply. Add/drop is the first lecture day and withdrawal is the second lecture day.) This course is an introduction to epidemiological thinking as it applies to the evaluation of the effects of drugs on the health of populations. It is composed of four parts: i) assessment of adverse event reports; ii) basic designs for pharmacoepidemiologic investigations; iii) data gathering in pharmacoepidemiology; iv) introduction to the use of epidemiologic methods for the assessment of benefits and economic impacts of drug.

EPIB 634 Data Analysis Computer Lab. (1) (Prerequisites: EPIB 606, EPIB 607, and EPIB 613.) (Corequisite: EPIB 621.) Computer lab for the multivariable regression analyses, using statistical software packages such as SAS.

EPIB 635 Clinical Trials. (3) (Prerequisites: EPIB 606, EPIB 607) Lectures and discussions on issues, approaches and techniques of clinical trials including assessment of feasibility, ethics, randomization, strength and weaknesses of alternative designs, sample size requirements, protocol development, trial management and analysis, reporting and interpretation of trial results.

EPIB 637 Infectious and Parasitic Disease Epidemiology. (3) (Offered only in Summer term.) (Prerequisite: EPIB 606 or equivalent) This course provides in-depth review of principles of infectious disease epidemiology and illustrates these using local and
global infections of current importance. Students will gain an understanding of principles of infectious disease epidemiology and how they apply to infections in both temperate and tropical areas.

**EPIB 638 GLOBAL HEALTH & SOCIAL POLICY.** (3) (Restriction: Enrolment limit 25; not open to students who are taking or have taken POLI 638.) Formal methods used in policy analysis, role of politics and conditions under which research on global health and social policy is used by decision makers.

**EPIB 641 SUBSTANTIVE EPIDEMIOLOGY 1.** (1) Designed to give students an overview of a major disease or health problem. Students will develop their knowledge of a topic regarding 1) key definitions, concepts and indicators useful in study of the problem; 2) epidemiology of problem; 3) major studies of interventions designed to address the problem. Topics currently offered include cancer, injury prevention and heart disease but not all are offered in each semester.

**EPIB 642 SUBSTANTIVE EPIDEMIOLOGY 2.** (1) Designed to give students an overview of a major disease or health problem. Students will develop their knowledge of a topic regarding 1) key definitions, concepts and indicators useful in study of the problem; 2) epidemiology of problem; 3) major studies of interventions designed to address the problem. Topics currently offered include cancer, injury prevention and heart disease but not all are offered in each semester.

**EPIB 643 SUBSTANTIVE EPIDEMIOLOGY 3.** (1) Designed to give students an overview of a major disease or health problem. Students will develop their knowledge of a topic regarding 1) key definitions, concepts and indicators useful in study of the problem; 2) epidemiology of problem; 3) major studies of interventions designed to address the problem. Topics currently offered include cancer, injury prevention and heart disease but not all are offered in each semester.

**EPIB 644 SUBSTANTIVE EPIDEMIOLOGY 4.** (1) Designed to give students an overview of a major disease or health problem. Students will develop their knowledge of a topic regarding 1) key definitions, concepts and indicators useful in study of the problem; 2) epidemiology of problem; 3) major studies of interventions designed to address the problem. Topics currently offered include cancer, injury prevention and heart disease but not all are offered in each semester.

**EPIB 645 SUBSTANTIVE EPIDEMIOLOGY 5.** (1) Designed to give students an overview of a major disease or health problem. Students will develop their knowledge of a topic regarding 1) key definitions, concepts and indicators useful in study of the problem; 2) epidemiology of problem; 3) major studies of interventions designed to address the problem. Topics currently offered include cancer, injury prevention and heart disease but not all are offered in each semester.

**EPIB 646 EVALUATION OF HEALTH SERVICES.** (3) (Course offered only in some years) (Prerequisites: EPIB 606, EPIB 607) This course will present methodologies for the evaluation of health services, and illustrate these approaches with a variety of clinical and community services. Topics will include: levels of evaluation, evaluation design, identification and measurement of key variables, and practical aspects of evaluation.

**EPIB 647 ANALYSIS TEMPORAL & SPATIAL DATA.** (3) (Prerequisites: EPIB 603 and EPIB 621 or permission of instructor.) This course focuses on the computational management and analysis of large data sets in epidemiology. We will consider data storage and retrieval, prospective temporal and spatial analysis, and the evaluation of pattern detection.

**EPIB 650 DIPLOMA DISSERTATION.** (9) A scholarly paper tailored to the student's interests and approved by the student's supervisor.

**EPIB 651 SELECTED TOPICS IN BIOSTATISTICS 1.** (1) The purpose of this 1-credit course is to cover specific methodologic topics in more detail than is given in the main courses on statistical methods. The topics to be offered may vary from year to year. Topics currently offered include "Biometric Methods in Occupational Epidemiology" and "Practical Considerations of Statistical Power".

**EPIB 652 SELECTED TOPICS IN BIOSTATISTICS 2.** (1) The purpose of this 1-credit course is to cover specific methodologic topics in more detail than is given in the main courses on statistical methods. The topics to be offered may vary from year to year. Topics currently offered include "Biometric Methods in Occupational Epidemiology" and "Practical Considerations of Statistical Power".

**EPIB 654 PHARMACOEPIDEMIOLOGY 4.** (2) (Offered only in Summer term.) (Prerequisites: EPIB 606, EPIB 607) The course is structured around a model of the cycle of public health research, including the surveillance of the health status, identification of modifiable risk factors and the evaluation of public health interventions. The course demonstrates the specific contribution of various disciplines to public health research, including statistics, demography, sociology and epidemiology.

**EPIB 655 EPIDEMIOLOGY IN PUBLIC HEALTH.** (3) (Prerequisites: EPIB 606, EPIB 607) This course is structured around a model of the cycle of public health research, including the surveillance of the health status, identification of modifiable risk factors and the evaluation of public health interventions. The course demonstrates the specific contribution of various disciplines to public health research, including statistics, demography, sociology and epidemiology.

**EPIB 656 HEALTH CARE TECHNOLOGY ASSESSMENT.** (3) (Due to the intensive nature of this course, the standard add/drop and withdrawal deadlines do not apply. Add/drop is the first lecture day and withdrawal is the second lecture day.) The utility of epidemiological techniques for the assessment of drug benefits after their marketing is presented. The course is composed of four parts: (i) methodology of Phase IV studies; (ii) measurement of quality of life; (iii) evaluation of the economic impact of drugs; and (iv) assessment of the effects of drugs and vaccines on the public health system.

**EPIB 657 TOPICS IN BIOSTATISTICS 1.** (1) The purpose of this 1-credit course is to cover specific methodologic topics in more detail than is given in the main courses on statistical methods. The topics to be offered may vary from year to year.

**EPIB 658 TOPICS IN BIOSTATISTICS 2.** (1) The purpose of this 1-credit course is to cover specific methodologic topics in more detail than is given in the main courses on statistical methods. The topics to be offered may vary from year to year.

**EPIB 659 PRACTICAL ASPECTS: PROTOCOL DEVELOPMENT.** (3) (Offered only in Summer term.) (Prerequisites: EPIB 606, EPIB 607) The course is structured around a model of the cycle of public health research, including the surveillance of the health status, identification of modifiable risk factors and the evaluation of public health interventions. The course demonstrates the specific contribution of various disciplines to public health research, including statistics, demography, sociology and epidemiology.

**EPIB 660 PRACTICAL ASPECTS: PROTOCOL DEVELOPMENT.** (3) (Offered only in Summer term.) (Prerequisites: EPIB 606, EPIB 607) The course is structured around a model of the cycle of public health research, including the surveillance of the health status, identification of modifiable risk factors and the evaluation of public health interventions. The course demonstrates the specific contribution of various disciplines to public health research, including statistics, demography, sociology and epidemiology.

**EPIB 661 PHARMACOEPIDEMIOLOGY 3.** (2) (Offered only in Summer term.) (Prerequisites: EPIB 631, EPIB 633 or permission of instructor) (Due to the intensive nature of this course, the standard add/drop and withdrawal deadlines do not apply. Add/drop is the first lecture day and withdrawal is the second lecture day.) The course is designed to give students working in groups the opportunity to develop, under guidance and criticism from instructors and fellow students, a protocol addressing a research question in their field of interest.

**EPIB 662 HEALTH IN DEVELOPING COUNTRIES.** (3) (Offered only in Summer term.) (Prerequisites: EPIB 606 or equivalent.) This course will provide an introduction to health issues in developing countries, including major health problems, health determinants and strategies to improve health status. Due emphasis will be given to the primary health care strategy and to the impact of other sectors of development on health. Examples of the work of communities, ministries, non-government organizations and international agencies will be presented and discussed with particular reference to issues of burden of disease, effectiveness and efficiency, feasibility, priority setting, sustainability and management.

**EPIB 663 SUBSTANTIVE EPIDEMIOLOGY 6.** (1) Designed to give students an overview of major disease or health problem, disease or substantive area. The students will develop their knowledge of the topic regarding 1) The key definition, concepts and indicators...
useful in the study of the problem; 2) The epidemiology of the problem; and 3) Major studies of interventions designed to address the problems.

**EPIB 665 SUBSTANTIVE EPIDEMIOLOGY 8.** (1) Designed to give students an overview of major disease or health problem, disease or substantive area. The students will develop their knowledge of the topic regarding 1) The key definition, concepts and indicators useful in the study of the problem; 2) The epidemiology of the problem; and 3) Major studies of interventions designed to address the problems.

**EPIB 666 SUBSTANTIVE EPIDEMIOLOGY 9.** (1) Designed to give students an overview of major disease or health problem, disease or substantive area. The students will develop their knowledge of the topic regarding 1) The key definition, concepts and indicators useful in the study of the problem; 2) The epidemiology of the problem; and 3) Major studies of interventions designed to address the problems.

**EPIB 668 SPECIAL TOPICS 1.** (2) Study, through lectures, guided reading, practicals, assignments etc., of an elected and approved topic of epidemiologic importance.

**EPIB 669 SPECIAL TOPICS 2.** (2) Study, through lectures, guided reading, practicals, assignments etc., of an elected and approved topic of epidemiologic importance.

**EPIB 669D1 (1).** EPIB 669D2 (1) **SPECIAL TOPICS 2.** (Students must register for both EPIB 669D1 and EPIB 669D2) Study, through lectures, guided reading, practicals, assignments etc., of an elected and approved topic of epidemiologic importance.

**EPIB 670 SPECIAL TOPICS 3.** (2) Study, through lectures, guided reading, practicals, assignments etc., of an elected and approved topic of epidemiologic importance.

**EPIB 671 SPECIAL TOPICS 4.** (2) Study, through lectures, guided reading, practicals, assignments etc., of an elected and approved topic of epidemiologic importance.

**EPIB 672 SPECIAL TOPICS 5.** (2) Study, through lectures, guided reading, practicals, assignments etc., of an elected and approved topic of epidemiologic importance.

**EPIB 675 SPECIAL TOPICS 6.** (3) Study, through lectures, guided reading, practicals, assignments etc., of an elected and approved topic of epidemiologic importance.

**EPIB 676 SPECIAL TOPICS 7.** (3) Study, through lectures, guided reading, practicals, assignments etc., of an elected and approved topic of epidemiologic importance.

**EPIB 677 SPECIAL TOPICS 8.** (3) Study, through lectures, guided reading, practicals, assignments etc., of an elected and approved topic of epidemiologic importance.

**EPIB 678 SPECIAL TOPICS 9.** (3) Study, through lectures, guided reading, practicals, assignments etc., of an elected and approved topic of epidemiologic importance.

**EPIB 679 SPECIAL TOPICS 10.** (3) Study, through lectures, guided reading, practicals, assignments etc., of an elected and approved topic of epidemiologic importance.

**EPIB 681 GLOBAL HEALTH: EPIDEMIOLOGICAL RESEARCH.** (3) (Prerequisite: With permission of instructor.) A review of selected epidemiological research focussing on global health and disease topics. Research from mostly developed countries and research methods will be highlighted. Case studies will be used to illustrate specific applications and challenges.

**EPIB 690 M.SC. THESIS.** (24)

**EPIB 701 PH.D. COMPREHENSIVE EXAMINATION.** (0) The comprehensive examination is a written examination. The objective is to assess the degree to which students have been able to assimilate and apply the principles of epidemiologic research. Examinations held twice yearly.

**EPIB 702 PH.D. PROPOSAL.** (0) (Note: Required for Ph.D. students.) Essential skills for thesis writing and defence, including essential elements of research proposals, formulation of research objectives, the design, and strategies.

**BIOSTATISTICS**

**BIOS 601 EPIDEMIOLOGY: INTRODUCTION AND STATISTICAL MODELS.** (4) (Prerequisites: Permission of instructor. Undergraduate course in mathematical statistics at level of MATH 324.) Examples of applications of statistics and probability in epidemiologic research. Source of epidemiologic data (surveys, experimental and non-experimental studies). Elementary data analysis for single and comparative epidemiologic parameters.

**BIOS 602 EPIDEMIOLOGY: REGRESSION MODELS.** (4) (Prerequisites: Permission of instructor. MATH 556 and BIOS 601, or their equivalents.) Multivariable regression models for proportions, rates and their differences/ratios; conditional logic regression; proportional hazards and other parametric/semi-parametric models; unmatched, nested, and self-matched case-control studies; links to Cox's method; rate ratio estimation when "time-dependent" membership in contrasted categories.

**BIOS 612 ADVANCED GENERALIZED LINEAR MODELS.** (4) (Prerequisites: BIOS 611 or MATH 533; and MATH 523, or equivalents.) Statistical methods for multinomial outcomes, overdispersion, and continuous and categorical correlated data; approaches to inference (estimating equations, likelihood-based methods, semi-parametric methods); analysis of longitudinal data; theoretical content and applications.

**BIOS 624 DATA ANALYSIS & REPORT WRITING.** (4) (Prerequisites: MATH 533 Analysis of Variance and Regression. MATH 523 Generalized Linear Models.) Common data-analytic problems. Practical approaches to complex data. Graphical and tabular presentation of results. Writing reports for scientific journals, research collaborators, consulting clients.

**BIOS 630 RESEARCH PROJECT/PRACTICUM IN BIOSTATISTICS.** (6) (Restriction: Limited to non-thesis M.Sc. students who have completed requirements.) Critical appraisal of the biostatistical literature related to a specific statistical methodology. Topic to be approved by faculty member who will direct student and evaluate the paper.

**BIOS 690 M.SC. THESIS.** (24) A review, appraisal of the performance, or application of, selected biostatistical methods, carried out under supervision.

**BIOS 691 SPECIAL TOPICS IN BIOSTATISTICS 1.** (4) (Prerequisite: Permission of the instructor.) Special topics in biostatistics.

**BIOS 692 SPECIAL TOPICS IN BIOSTATISTICS 2.** (4) (Prerequisite: Permission of the instructor.) Special topics in biostatistics.

**BIOS 693 SPECIAL TOPICS IN BIOSTATISTICS 3.** (4) (Prerequisite: Permission of the instructor.) Special topics in biostatistics.

**BIOS 694 SPECIAL TOPICS IN BIOSTATISTICS 4.** (4) (Prerequisite: Permission of the instructor.) Special topics in biostatistics.

**BIOS 695 SPECIAL TOPICS IN BIOSTATISTICS 5.** (1) (Prerequisite: Permission of the instructor.) Special topics in biostatistics.

**BIOS 696 SPECIAL TOPICS IN BIOSTATISTICS 6.** (1) (Prerequisite: Permission of the instructor.) Special topics in biostatistics.

**BIOS 697 SPECIAL TOPICS IN BIOSTATISTICS 7.** (2) (Prerequisite: Permission of the instructor.) Special topics in biostatistics.

**BIOS 698 SPECIAL TOPICS IN BIOSTATISTICS 8.** (2) (Prerequisite: Permission of the instructor.) Special topics in biostatistics.

**BIOS 700 PH.D. COMPREHENSIVE EXAMINATION PART A.** (0) (Restriction: Enrolment in the Ph.D. in Biostatistics) Exam is held once yearly) Assessment of student's ability to assimilate statistical theory.

**BIOS 701 PH.D. COMPREHENSIVE EXAMINATION PART B.** (0) (Restriction(s): Enrolment in the Ph.D. in Biostatistics) Assessment of student's ability to assimilate and apply statistical theory and methods for biostatistics.

**BIOS 702 PH.D. PROPOSAL.** (0) (Note: Required for Ph.D. students) Essential skills for thesis writing and defence, including essential elements of research proposals, methodological development and application, and presentation.
31 Food Science and Agricultural Chemistry

Department of Food Science and Agricultural Chemistry
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Canada

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Email: foodsience@mcgill.ca
Website: www.mcgill.ca/foodscience

Chair — S. Kermasha
Chair of Graduate Program — S. Kermasha

31.1 Staff

Professors
I. Ali; B.Sc.(Guy.), M.Sc., Ph.D.(McG.)
W.D. Marshall; B.Sc.(New Br.), Ph.D.(McM.)
H. Ramaswamy; B.Sc.(B’lore), M.Sc., Ph.D.(Br. Col.)
F.R. van de Voort; B.Sc., M.Sc., Ph.D.(Br. Col.)

Associate Professors
A.A. Ismail; B.Sc., Ph.D.(McG.)
S. Kermasha; B.Sc.(Baghdad), C.E.S, D.E.A, D.Sc.(Nancy)
B.K. Simpson; B.Sc.(Ghana), Ph.D.(Nfld.)

Assistant Professor
F.R. van de Voort; B.Sc., M.Sc., Ph.D.(Br. Col.)

31.2 Programs Offered
M.Sc. (Non-Thesis), M.Sc. (Thesis) and Ph.D.
The Department has laboratory and research facilities required for research leading to the degree of Master of Science and Doctor of Philosophy in the field of food science, specifically in the chemical, biochemical and analytical aspects thereof.

31.3 Admission Requirements

Applications to the M.Sc. programs must be graduates of a university of recognized reputation and hold a B.Sc. in Food Science or a related discipline such as Chemistry, Biochemistry, or Microbiology with a minimum cumulative grade point average (CGPA) of 3.0/4.0 (second class-upper division) and 3.2/4.0 during the last two years of full-time university study. Applicants to the Ph.D. program must hold a M.Sc. degree in Food Science or related areas with a minimum CGPA of 3.4 in their M.Sc. and 3.2 for the last two years of their B.Sc. degree. High grades are expected in 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 appropriate exams, e.g., TOEFL (minimum score 550 on the paper-based test, 213 on the computer-based test or 86 on the internet-based test with each component not less than 20) or IELTS (minimum overall band 6.5). The MCHE is not considered equivalent. Results must be submitted as part of the application.

Graduate Record Exam (GRE) - The GRE is not required, but it is highly recommended.

31.4 Application Procedures

Applications for graduate studies must forward supporting documents to:
Department of Food Science and Agricultural Chemistry
Macdonald Campus of McGill University
21,111 Lakeshore Road
Sainte-Anne-de-Bellevue, QC H9X 3V9
Canada

Telephone: 514-398-8615
Fax: 514-398-7977
Email: foodsience@mcgill.ca

Transcripts - Two official copies of all university-level transcripts with proof of degree(s) granted. Transcripts written in a language other than English or French must be accompanied by a certified translation. An explanation of the grading system used by the applicant's university is essential. It is the applicant's responsibility to arrange for transcripts to be sent.

Competency in English - 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 appropriate exams, e.g., TOEFL (minimum score 550 on the paper-based test, 213 on the computer-based test or 86 on the internet-based test with each component not less than 20) or IELTS (minimum overall band 6.5). The MCHE is not considered equivalent. Results must be submitted as part of the application.

Application Fee (non-refundable) - A fee of $100 Canadian must accompany each application (including McGill students), otherwise it cannot be considered. This sum must be remitted using one of the following methods:

1. Credit card (by completing the appropriate section of the application form). N.B.: online applications must be paid for by credit card.
2. Certified cheque in CAD$ drawn on a Canadian bank.
4. Canadian Money order in CAD$.
5. U.S. Money Order in USD$.
6. An international draft in Canadian funds drawn on a Canadian bank requested from the applicant's bank in his/her own country.

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

31.5 Dates for Guaranteed Consideration

For dates for guaranteed consideration, please consult the following website: www.mcgill.ca/gradapplicants/programs. Then select the appropriate program. It may be necessary to delay review of the applicant's file until the following admittance period if application materials including supporting documents are received after the dates for guaranteed consideration. International applicants are advised to apply well in advance of these dates because immigration procedures may be lengthy. Applicants are encouraged to make use of the online application form available on the web at www.mcgill.ca/gradapplicants/apply.

For dates for guaranteed consideration, please consult the following website: www.mcgill.ca/gradapplicants/programs. Then select the appropriate program. It may be necessary to delay review of the applicant's file until the following admittance period if application materials including supporting documents are received after the dates for guaranteed consideration. International applicants are advised to apply well in advance of these dates because immigration procedures may be lengthy. Applicants are encouraged to make use of the online application form available on the web at www.mcgill.ca/gradapplicants/apply.

31.6 Documents Submitted Will Not Be Returned

Documents submitted will not be returned.

Cover Letter - Letter to the chair indicating the reasons for the application.

Statement of Purpose - A statement of purpose that highlights the applicant's research and career goals.

Statement of Research - A statement of research that outlines the applicant's research interests.

Curriculum Vitae - A curriculum vitae that includes a list of all previous degrees, awards, and publications.

Publications - A list of all publications and presentations.

Research Experience - A description of previous research experience.

Letters of Recommendation - Two letters of recommendation on letterhead (official paper) of originating institution or bearing the university seal and with original signatures from two instructors familiar with the applicant's work, preferably in the applicant's area of specialization. It is the applicant's responsibility to arrange for these letters to be sent.

The University code is 0935 (McGill University, Montreal); please use Department code 31 (Graduate Schools), Biological Sciences - Agriculture, to ensure that your TOEFL reaches this office without delay.

Graduate Record Exam (GRE) - The GRE is not required, but it is highly recommended.

DOCUMENTS SUBMITTED WILL NOT BE RETURNED.

Application Fee (non-refundable) - A fee of $100 Canadian must accompany each application (including McGill students), otherwise it cannot be considered. This sum must be remitted using one of the following methods:

1. Credit card (by completing the appropriate section of the application form). N.B.: online applications must be paid for by credit card.
2. Certified cheque in CAD$ drawn on a Canadian bank.
4. Canadian Money order in CAD$.
5. U.S. Money Order in USD$.
6. An international draft in Canadian funds drawn on a Canadian bank requested from the applicant's bank in his/her own country.

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

31.7 Admission Procedures

Application Fee (non-refundable) - A fee of $100 Canadian must accompany each application (including McGill students), otherwise it cannot be considered. This sum must be remitted using one of the following methods:

1. Credit card (by completing the appropriate section of the application form). N.B.: online applications must be paid for by credit card.
2. Certified cheque in CAD$ drawn on a Canadian bank.
4. Canadian Money order in CAD$.
5. U.S. Money Order in USD$.
6. An international draft in Canadian funds drawn on a Canadian bank requested from the applicant's bank in his/her own country.

Financial aid is very limited and highly competitive. It is suggested that students give serious consideration to their financial planning before submitting an application.
Acceptance to all programs depends on a staff member agreeing to serve as the student's supervisor and the student obtaining financial support. Normally, a student will not be accepted unless adequate financial support can be provided by the student and/or the student's supervisor. Academic units cannot guarantee financial support via teaching assistantships or other funds.

Qualifying Students – Some applicants whose academic degrees and standing entitle them to serious consideration for admission to graduate studies, but who are considered inadequately prepared in the subject selected may be admitted to a Qualifying Program if they have met the Graduate and Postdoctoral Studies minimum CGPA of 3.0/4.0. The course(s) to be taken in a Qualifying Program will be prescribed by the academic unit concerned. Qualifying students are registered in graduate studies, but not as candidates for a degree. Only one qualifying year is permitted. Successful completion of a qualifying program does not guarantee admission to a degree program.

31.5 Program Requirements

M.Sc. in Food Science and Agricultural Chemistry (Non-Thesis) (45 credits)

This 45-credit program is offered to candidates who seek further training in Food Science but do not wish to pursue independent research. These credits are obtained through a combination of graduate courses.

The residence time for a M.Sc. degree (Non-Thesis) is three academic terms.

Required Courses (15 credits)

FDSC 695 (3) M.Sc. Graduate Seminar 1
FDSC 696 (3) M.Sc. Graduate Seminar 2
FDSC 697 (4.5) M.Sc. Project Part 1
FDSC 698 (4.5) M.Sc. Project Part 2

Complementary Courses (30 credits)

A minimum of five courses (15 credits) must be selected from the following list. The remaining credits (at the 500 or 600 level) are chosen in consultation with the academic adviser.

AGRI 510 (3) Professional Practice
FDSC 515 (3) Enzyme Thermodynamics/Kinetics
FDSC 519 (3) Advanced Food Processing
FDSC 520 (3) Biophysical Chemistry of Food
FDSC 530 (3) Advanced Analytical Chemistry
FDSC 535 (3) Food Biotechnology
FDSC 536 (3) Food Traceability
FDSC 537 (3) Nutraceutical Chemistry
FDSC 538 (3) Food Science in Perspective
FDSC 634 (3) Food Toxins & Toxicants
FDSC 651 (3) Principles of Food Analysis 2
FDSC 652 (3) Separation Techniques in Food Analysis 2

M.Sc. in Food Science and Agricultural Chemistry (Thesis) (45 credits)

For candidates entering the M.Sc. program without restrictions, i.e., those not requiring a qualifying term/year, the M.Sc. degree consists of 45 graduate credits. These credits are obtained through a combination of graduate courses and a research thesis.

The residence time for a M.Sc. degree is three academic terms based on unqualified entry into the M.Sc. program and students are encouraged to complete their studies within this time frame.

Required Courses (6 credits)

FDSC 695 (3) M.Sc. Graduate Seminar 1
FDSC 696 (3) M.Sc. Graduate Seminar 2

Complementary Courses (9 credits)

At least 9 credits, normally from 500- or 600-level departmental courses.

Thesis Component – Required (30 credits)

FDSC 690 (8) M.Sc. Literature Review
FDSC 691 (7) M.Sc. Research Protocol
FDSC 692 (15) M.Sc. Thesis

Ph.D. in Food Science and Agricultural Chemistry

Candidates will be judged principally on their ability in research. Course work will be arranged in consultation with the departmental graduate advisory committee. Candidates should be prepared to take the Comprehensive Preliminary Examination by the end of the second year in which they are candidates for the Ph.D. degree.

Required Courses (9 credits)

FDSC 725 (3) Advanced Topics in Food Science
FDSC 797 (3) Ph.D. Graduate Seminar 1
FDSC 798 (3) Ph.D. Graduate Seminar 2

Comprehensive

FDSC 700 (0) Comprehensive Preliminary Examination

Thesis

31.6 Courses

Students preparing to register should consult Class Schedule on the web at www.mcgill.ca/student-records/register/class-schedule for the most up-to-date list of courses available; courses may have been added, rescheduled or cancelled after this Calendar was published. Class Schedule lists courses by term and includes days, times, locations, and names of instructors.

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

★ Denotes courses taught only in alternate years.

★ FDSC 515 ENZYME THERMODYNAMICS/KINETICS. (3) (Winter) (Prerequisites: FDSC 211 and FDSC 233 or instructor's permission) (Course offered in even years. Check with Graduate advisor.) Selected advanced topics on the biophysical and kinetic aspects of enzymatic reactions, particularly the fundamentals and applications of laws of biothermodynamics, biochemical equilibrium, electrochemistry and biochemical kinetics as related to the enzymatic reactions.

★ FDSC 519 ADVANCED FOOD PROCESSING. (3) (Winter) (3 lectures) (Prerequisite: FDSC 330) (Course offered in even years. Check with Graduate advisor.) Advanced technologies associated with food processing studied in more detail. Topics include food irradiation, reverse osmosis, super critical fluid extraction and extrusion.

★ FDSC 520 BIOPHYSICAL CHEMISTRY OF FOOD. (3) (Fall) (3 lectures) (Prerequisite: FDSC 233) (Course offered in odd years) (check with Graduate Advisor) This course will cover recent advances in the application of spectroscopic techniques, including infrared, Raman, near-infrared, circular dichroism, and fluorescence spectroscopy, to the study of biomolecules of relevance to food. Particular emphasis will be placed on the molecular basis of structure-function and structure-functionality relationships.

★ FDSC 530 ADVANCED ANALYTICAL CHEMISTRY. (3) (Fall) (3 lectures) (Prerequisite: FDSC 213) (Course offered in odd years) (check with Graduate Advisor) Selected instrumental methodologies including advances in automated chromatography, wide band NMR, chemical sensors, and the application of other spectroscopic techniques to the analysis of food constituents.

★ FDSC 535 FOOD BIOTECHNOLOGY. (3) (Fall) (3 lectures) (Prerequisite: MICR 230) (Course offered in odd years.) Developments in biotechnology as it relates to food production and processing concerning traditional food fermentations as well as novel food biotechnology enzymes, ingredients, genetic engineering, plant tissue culture and developments for microbiological and food analysis.
FDSC 536 FOOD TRACEABILITY. (3) (Winter) (Prerequisite: FDSC 425 or by Instructor's permission.) (Course offered in odd years.) Concepts and processes associated with the identification, tracking and tracing food forward and backward through the food continuum.

FDSC 537 NUTRACEUTICAL CHEMISTRY. (3) (Fall) (Prerequisites: FDSC 230, FDSC 233, FDSC 211 or by Instructor's permission.) (Course offered in even years.) The origin, classification, mechanism of action and chemical properties of potential and established nutraceutical compounds and their applications in functional foods.

FDSC 538 FOOD SCIENCE IN PERSPECTIVE. (3) (Fall) (Restriction: Not open to students with an undergraduate degree in Food Science or currently majoring in Food Science. Open to U3 students and above.) Food industry, food properties, nutritive aspects, quality factors, and key preservation processes, with self-study linking these elements directly to specific commodities and product groups, their characteristics, chemistry and distinct manufacturing processes.

FDSC 634 FOOD TOXINS & TOXICANTS. (3) (Winter) (Prerequisite: Permission of instructor.) Toxins and toxicant residues in food are explored from an analytical perspective. New techniques of analysis and strategies are emphasized.

FDSC 651 PRINCIPLES OF FOOD ANALYSIS 2. (3) (Fall) (3 lectures; one 3-hour lab) (Prerequisite: Permission of instructor.) The fundamentals of food analysis are presented with the emphasis on the major food components. Topics include: sampling, method selection, official methods, proximate analysis, moisture, protein, fat, ash, fiber, carbohydrates, vitamins, nutraceutical compounds and infra-red analyses.

FDSC 652 SEPARATION TECHNIQUES IN FOOD ANALYSIS 2. (3) (Winter) (3 lectures; one 3-hour lab) (Prerequisite: Permission of instructor.) Advanced detailed treatment of the principal chromatographic and electrophoretic techniques associated with the analysis of carbohydrate, lipid and protein constituents of food.

FDSC 690 M.Sc. LITERATURE REVIEW. (8) Master of Science literature review.

FDSC 691 M.Sc. RESEARCH PROTOCOL. (7) Master of Science research protocol.

FDSC 692 M.Sc. THESIS. (15) Master of Science research portion of the M.Sc. thesis based on results obtained from the research phase of the M.Sc. thesis. Satisfactory completion of the M.Sc. thesis, its approval by reviewers and acceptance by Graduate and Postdoctoral Studies is required to pass the course.

FDSC 695 M.Sc. GRADUATE SEMINAR 1. (3) Presentation on a selected topic, research proposal or research results based on progress in degree work (M.Sc.1).

FDSC 696 M.Sc. GRADUATE SEMINAR 2. (3) Presentation on a selected topic, research proposal or research results based on progress in degree work (M.Sc.2).

FDSC 697 M.Sc. PROJECT PART 1. (4.5) (Restriction: Must be registered in the M.Sc. in Food Science and Agricultural Chemistry; Non-Thesis-Food Science.) A critical review of the current state of knowledge of some aspect of Food Science or Technology.

FDSC 698 M.Sc. PROJECT PART 2. (4.5) (Prerequisite: FDSC 697.) (Restriction: Must be registered in the M.Sc. in Food Science and Agricultural Chemistry; Non-Thesis-Food Science.) A critical review of the current state of knowledge of some aspects of Food Science or Technology.

FDSC 700 COMPREHENSIVE PRELIMINARY EXAMINATION. (0) (See Faculty Regulations)

FDSC 725 ADVANCED TOPICS IN FOOD SCIENCE. (3) (Restrictions: Restricted to Ph.D. students in Food Science. Not open to students who have taken FDSC 625.) Selected subjects related to advancements taking place in the discipline of Food Science will be studied to gain an in-depth understanding of their principles, application and potential impact.
M.A.
Pour être admis directement en M.A. I, le candidat doit être titulaire d'un B.A. avec spécialisation en littérature française, québécoise ou francophone, ou l'équivalent; avoir obtenu au cours de sa scolarité de maîtrise une moyenne d'au moins 75 %. 

1) Être titulaire d'un M.A. en littérature française, québécoise ou francophone, ou l'équivalent; avoir obtenu au cours de sa scolarité de maîtrise une moyenne d'au moins 75 %. 

2) Présenter un projet d'étude, en français, indiquant avec une certaine précision le domaine et la méthodologie de la recherche qu'il envisage de poursuivre pour sa thèse de doctorat et le nom du professeur sous la direction duquel il souhaite travailler. La Commission des admissions sera mieux à même de juger, d'après ce projet, du sérieux du candidat et de ses aptitudes à la recherche littéraire avancée.

32.4 Demande d'admission
En plus de deux lettres de recommandation et des relevés de notes officiels, les étudiants de l'extérieur du Département doivent fournir un échantillon de travail écrit, en français.

Le formulaire de demande d'admission par le web est disponible pour tous les candidats aux études supérieures à l'adresse suivante: http://francais.mcgill.ca/gradapplicants/apply.

Dernières dates de réception garantissant l'examen des demandes
Pour vérifier les dernières dates de réception garantissant l'examen des demandes, veuillez consulter le site web suivant : http://francais.mcgill.ca/gradapplicants/programs et sélectionner le programme approprié.

Nous n'examinerons aucune demande d'admission visant le trimestre d'été.

32.5 Programme d'études
Maitrise
Le programme de maîtrise est à la fois un programme complet en soi et une première étape vers le Ph. D. Il vise deux buts également importants :

1) Permettre à l'étudiant de compléter et d'approfondir ses connaissances dans le domaine littéraire grâce à un programme d'enseignement portant sur les littératures française et québécoise de même que sur une variété de sujets connexes : théorie littéraire, histoire de la langue, civilisation, etc.
2) Favoriser l'apprentissage de la recherche et un début de spécialisation de la part de l'étudiant qui suit des séminaires d'initiation à la recherche littéraire et, soit rédige un mémoire, soit exécute d'autres travaux de recherche sous la direction des professeurs du Département.

La durée des études de maîtrise est normalement de deux ans. Dans le cas de la maîtrise avec mémoire, elle comprend deux trimestres pour la scolarité (M.A. I), suivis de la rédaction du mémoire. Dans le cas de la maîtrise sans mémoire, la scolarité s'étend sur trois trimestres, suivis de la rédaction de trois travaux rédigés dans le cadre du FREN 698. Le choix des séminaires que fait l'étudiant doit être approuvé par le Directeur des études au moment de l'inscription. La Commission des admissions du Département peut accorder des dérogations au règlement des inscriptions à la Maîtrise en fonction du dossier de chaque étudiant.

Une partie de la scolarité (maximum de 6 crédits) peut être suivie dans un autre département de McGill qui offre des cours dans le domaine des Humanités de l'annuaire des Études supérieures et postdoctorales, ou dans une autre université, pourvu que les cours et séminaires y soient de même niveau que les cours 600 ou 700 offerts par le Département. Dans tous les cas, l'étudiant doit obtenir l'autorisation du Directeur des études de 2e et 3e cycles et de la recherche, qui ne sera accordée que si les cours en question cadrent avec le programme d'études du candidat.

La note de passage est B- (65 %).

Maitrise avec mémoire (48 crédits)
Les deux premières sessions du programme de maîtrise sont consacrées à la scolarité, pour les étudiants inscrits à temps complet; ils doivent alors suivre six séminaires de 3 crédits (dont le FREN 697) et préparer leur sujet de mémoire (FREN 696 : 6 crédits). Les étudiants inscrits à mi-temps doivent s'inscrire à un minimum de deux séminaires par session.

L'étudiant peut présenter un mémoire de critique littéraire ou un mémoire d'écriture littéraire.

Cours obligatoires (9 crédits)
FREN 696 (6) Élaboration projet de mémoire
FREN 697 (3) Méthodologie et théorie littéraires

Cours complémentaires (15 crédits)
15 crédits, 5 séminaires; un maximum de 6 crédits peuvent être suivis dans un autre département de McGill qui offre des cours dans le domaine des Humanités de l'annuaire des Études supérieures et postdoctorales, ou dans une autre université. (Les séminaires FREN 609 et FREN 611 – Création littéraire 1 et 2 – sont fortement recommandés aux étudiants qui ont l'intention de présenter un mémoire d'écriture littéraire.)

Mémoire – obligatoire (24 crédits)
FREN 699 (24) M.A. Thesis

Maitrise avec mémoire – Option en études sur les femmes et le genre (48 crédits)
L’Option en études sur les femmes et le genre (« Graduate Option in Gender and Women’s Studies ») est un programme pluridisciplinaire offert aux étudiants qui remplissent en même temps toutes les exigences du programme de maîtrise avec mémoire du Département de langue et littérature françaises. En plus des deux cours obligatoires suivis au Département, les étudiants doivent suivre un cours de 3 crédits réservé aux étudiants de cette Option. Parmi les cours au choix, les étudiants doivent suivre deux cours de 3 crédits chacun qui ont été approuvés par l’Option et qui portent sur des questions reliées au genre et aux recherches et méthodologies féministes. Leur mémoire doit porter sur un sujet explicitement lié au genre ou aux études sur les femmes.

Les deux premières sessions du programme de maîtrise sont consacrées à la scolarité, pour les étudiants inscrits à temps complet; ils doivent alors suivre six séminaires de 3 crédits (dont le FREN 697) et préparer leur sujet de mémoire (FREN 696 : 6 crédits). Les étudiants inscrits à mi-temps doivent s'inscrire à un minimum de deux séminaires par session.

L'étudiant peut présenter un mémoire de critique littéraire ou un mémoire d'écriture littéraire.

Cours obligatoires (12 crédits)
FREN 696 (6) Élaboration projet de mémoire
FREN 697 (3) Méthodologie et théorie littéraires
WMST 601 (3) Feminist Theories and Methods

Cours complémentaires (12 crédits) - 500 niveau ou plus
Six crédits de séminaires au choix parmi les séminaires du Département ou à l'extérieur du Département qui ont été approuvés par l'option.

Six crédits de séminaires au choix, dont un peut être suivi à l'extérieur du Département.

Mémoire – obligatoire (24 crédits)
FREN 699 (24) M.A. Thesis
Maîtrise sans mémoire (48 crédits)
Les deux premières sessions du programme sont consacrées à la maîtrise, pour les étudiants inscrits à temps complet; ils doivent suivre 8 séminaires de trois crédits, soit 4 par session. Les cours FREN 697 et FREN 600 sont obligatoires. Les étudiants inscrits à mi-temps doivent s'inscrire à un minimum de deux séminaires par session.

Cours obligatoires (6 crédits)
FREN 600 (3) Travaux dirigés 1
FREN 697 (3) Méthodologie et théorie littéraires

Cours complémentaires (24 crédits)
24 crédits, 8 cours; un maximum de 6 crédits peuvent être suivis dans un autre département de McGill qui offre des cours dans le domaine des Humanités de l'année des Études supérieures et postdoctorales, ou dans une autre université.

Projet – obligatoire (18 crédits)
FREN 698 (18) Master's Seminar
Les étudiants complètent le programme de maîtrise en rédigeant trois travaux de recherche.

Ph. D.
Épreuve d'anglais
Tous les étudiants de Ph. D. doivent réussir, avant le dépôt de leur thèse, une épreuve destinée à vérifier leur connaissance de la langue anglaise (FREN 790).

Scolarité
L'admission se fait normalement au niveau de Ph. D. II. Lorsqu'un candidat, par exception, est admis en Ph. D. I, sa scolarité pendant cette année est la même que pour l'année de M.A. I (voir ci-dessus).

Ph. D. II
Trois séminaires au choix, ainsi que les Séminaires de doctorat 1 et 2 (FREN 710 et FREN 711) qui sont obligatoires.

Ph. D. III
Élaboration du sujet de thèse et Examen préliminaire (FREN 706, 0 crédit) et Examen préliminaire (FREN 707, 0 crédit).
Après l'élaboration du projet de thèse, celui-ci est soumis au Comité des études de 2e et 3e cycles et de la recherche; puis l'Examen préliminaire, qui consiste en la rédaction et la défense orale d'un document d'une cinquantaine de pages, a lieu à une date convenue entre les intéressés, devant un jury constitué de trois professeurs.

Ph. D. IV Thèse
Au moment de l'Examen préliminaire, un comité-conseil est constitué, comprenant le directeur de thèse et deux autres professeurs. Le rôle de ce comité-conseil est de suivre d'au moins six personnes, présidé par un représentant du Doyen; font partie du jury le comité-conseil de l'étudiant et deux autres professeurs, dont le Directeur du Département et au moins un universitaire extérieur au Département ou à l'Université McGill.

Ph. D. – Option en études sur les femmes et le genre
L'Option en études sur les femmes et le genre (« Graduate Option in Gender and Women's Studies ») est un programme pluridisciplinaire offert aux étudiants qui remplissent en même temps toutes les exigences du programme de doctorat du Département de langue et littérature françaises. En plus des cours obligatoires suivis au Département, les étudiants doivent suivre trois cours de 3 crédits chacun qui ont été approuvés par l'Option et qui portent sur des questions reliées au genre et aux recherches et méthodologies féministes. Leur thèse doit porter sur un sujet explicitement lié au genre ou aux études sur les femmes.

Épreuve d'anglais
Tous les étudiants de Ph. D. doivent réussir, avant le dépôt de leur thèse, une épreuve destinée à vérifier leur connaissance de la langue anglaise (FREN 790).

Programme
Le programme de Ph. D. comporte trois parties :

• Scolarité
• Élaboration du sujet de thèse et Examen préliminaire
• Thèse

Scolarité
L'admission se fait normalement au niveau de Ph. D. II. Lorsqu'un candidat, par exception, est admis en Ph. D. I, sa scolarité pendant cette année est la même que pour l'année de M.A. I (voir ci-dessus).

Ph. D. II
Cours obligatoires (99 crédits)
FREN 710 (1.5) Séminaire de doctorat 1
FREN 711 (1.5) Séminaire de doctorat 2
FREN 790 (0) Language Requirement
WMST 601 (3) Feminist Theories and Methods
WMST 602 (3) Feminist Research Symposium

Cours complémentaires (3 crédits)
Un séminaire (3 crédits) au choix de niveau 500 ou plus parmi les séminaires du Département qui ont été approuvés par l'Option et qui portent sur les femmes et le genre. Ce cours ne peut pas être suivi à l'extérieur du Département.

Ph. D. III
Élaboration du sujet de thèse (FREN 706, 0 crédit) et Examen préliminaire (FREN 707, 0 crédit).
Après l'élaboration du projet de thèse, celui-ci est soumis au Comité des études de 2e et 3e cycles et de la recherche; puis l'Examen préliminaire, qui consiste en la rédaction et la défense orale d'un document d'une cinquantaine de pages, a lieu à une date convenue entre les intéressés, devant un jury constitué de trois professeurs.

Ph. D. IV Thèse
Au moment de l'Examen préliminaire, un comité-conseil est constitué, comprenant le directeur de thèse et deux autres professeurs. Le rôle de ce comité-conseil est de suivre d'au moins six personnes, présidé par un représentant du Doyen; font partie du jury le comité-conseil de l'étudiant et deux autres professeurs, dont le Directeur du Département et au moins un universitaire extérieur au Département ou à l'Université McGill.
32.6 Cours de 2e et 3e cycles

Comme des changements dans l’offre des cours ont pu sur-
venir depuis la publication de cet annuaire, il est fortement
recommandé aux étudiants de consulter le site web
http://francais.mcgill.ca/student-records/register/class-schedule
(Horaire des cours) avant de s’inscrire. On y trouvera une liste
da jours des cours par trimestre ainsi que les horaires,
les locaux et les noms des professeurs.

L’étudiant trouvera, dans la section « Études de 2e et 3e cycles »
accessible sur le site web du Département, la description détaillée
des séminaires offerts ainsi que tous les renseignements perti-
nants sur les programmes.

Cours offerts en 2009-2010. Le nombre de crédits est indiqué
entre parenthèses, après le titre du cours.

FREN 599 STAGE EN MILIEU DE TRAVAIL. (3) (Ouvert aux étudiants
de U3 avec une moyenne de 3,3 pour l’ensemble du programme,
da un programme de Spécialisation ou de Concentration
majeure du Département ; les trois crédits comptent parmi les
crédits libres (" electives "); permission du comité des études req-
uis. Pour les étudiants de M.A. ou de Ph. D., permission du
comité des études de 2e et 3e cycles ; à noter que ces crédits ne
peuvent pas compter comme crédits de programme de M.A. ou
Ph. D. Une description complète des exigences et des modalités
du stage sera affichée sur le site web du Département. Ces exi-
gences sont les suivantes : présentation par l’étudiant d’un Projet
de stage précisant quelle sera l’institution hôte et en quoi consist-
era le stage ; présentation par l’étudiant d’un compte rendu de son
stage approuvé par un superviseur de l’institution hôte ; et rédac-
tion d’un travail universitaire sur un sujet relié au stage.) Stage en
milieu de travail dans une institution ou organisation approuvée.

FREN 600 TRAVAUX DIRIGÉS 1. (3)
FREN 609 CRÉATION LITTÉRAIRE 1. (3)
FREN 611 CRÉATION LITTÉRAIRE 2. (3)
FREN 612 SEMINAIRE DE RECHERCHE 1. (3)
FREN 613 SEMINAIRE DE RECHERCHE 2. (3)
FREN 615 LITTÉRATURE ET SOCIÉTÉ 1. (3)
FREN 616 LITTÉRATURE ET LINGUISTIQUE. (3)
FREN 620 ÉVOLUTION - LANGUE FRANÇAISE AU CANADA. (3)
FREN 621 PROBLÈMES D’ESTHÉTIQUE 1. (3)
FREN 624 QUESTIONS DE GENRE 1. (3)
FREN 626 QUESTIONS DE GENRE 2. (3) Poétique du récit de voy-
age.
FREN 628 PROBLÈMES DE THÉORIE LITTÉRAIRE. (3)
FREN 629 HISTOIRE DES IDÉES. (3)
FREN 635 THÈME DE LITTÉRATURE FRANÇAISE 1. (3)
FREN 637 LITTÉRATURE ET AUTRES ARTS 1. (3) Roman et cinéma.
FREN 638 LITTÉRATURE ET AUTRES ARTS 2. (3)
FREN 682 L’ESSAI QUÉBÉCOIS. (3)
FREN 696 ÉLABORATION PROJET DE MÉMOIRE. (6)
FREN 697 MÉTHODELOGIE ET THÉORIE LITTÉRAIRES. (3) Ce sémi-
naire présente annuellement un courant théorique dans le
domaine des études littéraire de la langue française. Il intègre la
présentation par les étudiants de leurs sujets de mémoire, de leurs
approches et de leurs méthodologies.

FREN 698 SEMINAR. (18)
FREN 699 M.A. THESIS. (24)

FREN 706 ÉLABORATION DU SUJET DE THÈSE. (0) Après consulta-
tion avec le Directeur de thèse, soumission d’un travail qui précise
le sujet, la problématique, la méthode et la bibliographie de la
thèse.

FREN 707 EXAMEN PRÉLIMINAIRE. (0) (Préalable: FREN 706.)
Épreuve qui consiste en la préparation d’un texte écrit suivie d’une
interrogation orale par un jury.

FREN 710 SEMINAR DE DOCTORAT 1. (1.5) (Restriction: Réservé
aux étudiants de Ph.D. du Département.) Ce séminaire porte sur
les aspects théoriques et méthodologiques du projet de thèse des
candidats. Il se veut un lieu privilégié d’échanges et de réflexions
où l’on discutera principalement des nouvelles problématiques
textuelles, des enjeux théoriques contemporains et des questions
d’actualité littéraire.

FREN 711 SEMINAR DE DOCTORAT 2. (1.5) (Préalable: FREN
710) (Restriction: Réservé aux étudiants de Ph.D. du Départe-
ment.) Ce séminaire prolonge la réflexion amorcée au sein du
Séminaire de doctorat 1.

FREN 712 SEMINAR DE RECHERCHE 3. (3)
FREN 713 SEMINAR DE RECHERCHE 4. (3) Histoire du livre et de
l’imprimé.

FREN 720 MOYEN ÂGE 1. (3)
FREN 721 MOYEN ÂGE 2. (3) Le Roman de la Rose.
FREN 723 16E SIÈCLE 1. (3)
FREN 727 17E SIÈCLE 2. (3)
FREN 728 17E SIÈCLE 3. (3)
FREN 729 18E SIÈCLE 1. (3) La littérature et la table au XVIIIe siè-
cle.
FREN 730 18E SIÈCLE 2. (3)
FREN 731 18E SIÈCLE 3. (3)
FREN 732 19E SIÈCLE 1. (3)
FREN 734 19E SIÈCLE 3. (3)
FREN 735 19E SIÈCLE 4. (3)
FREN 736 19E SIÈCLE 5. (3)
FREN 737 20E SIÈCLE 1. (3) Nouveau Roman et autobiographie.
FREN 738 20E SIÈCLE 2. (3)
FREN 739 20E SIÈCLE 3. (3)
FREN 740 20E SIÈCLE 4. (3)
FREN 741 20E SIÈCLE 5. (3)
FREN 750 ROMAN QUÉBÉCOIS 1. (3)
FREN 761 THÈME DE LITTÉRATURE QUÉBÉCOISE 1. (3)
FREN 762 THÈME DE LITTÉRATURE QUÉBÉCOISE 2. (3)
FREN 790 LANGUAGE REQUIREMENT. (0)
33.2 Programs Offered

M.A., M.Sc. and Ph.D.

McGill Northern Research Stations
The McGill Subarctic Research Station is located at Schefferville, in the centre of Quebec-Labrador. Facilities exist for research in most areas of physical and some areas of human geography in the subarctic.

McGill University also operates a field station at Expedition Fiord on Axel Heiberg in the High Arctic. Facilities are limited to a small lab and dorm building and cookhouse. Research activities focus on the glacial and geological. For additional information on these stations, contact the Scientific Director, Wayne Pollard, Department of Geography.

Centre for Climate and Global Change Research
The Department of Geography, with the McGill Departments of Atmospheric and Oceanic Sciences, Economics, Natural Resource Sciences; and several departments from the Université du Québec à Montréal and Université de Montréal developed a collaborative research centre that examines climate and global change. Through this Centre there are graduate opportunities.

For more information contact Professor Nigel Roulet, Director, Centre for Climate and Global Change, McGill University.

33.3 Admission Requirements

M.A. and M.Sc. Degrees
Attention is directed to the Graduate and Postdoctoral Studies admission regulations outlined in the General Information section of the Calendar, Admission, section 5.

Applicants not satisfying these conditions, but with primary undergraduate specialization in a cognate field, may be admitted to the M.A. or M.Sc. degree in Geography in certain circumstances. In general, they, and others who have deficiencies in their preparation but are otherwise judged to be acceptable, will be required to register for a qualifying program or to undertake additional courses.

Ph.D. Degree
Students who have completed a master’s degree in Geography (with high standing) may be admitted at Ph.D. 2 level.

On rare occasions, a student may be admitted to the Ph.D. degree without having first taken the master’s degree. They, and others who have deficiencies in their preparation but are otherwise acceptable, will be required to register for a year of coursework and/or be required to take extra courses. The normal duration of a program, including field work where required, is three years.

Normally, the Department will restrict admission to the Ph.D. program to students prepared to work in one of the fields of human or physical geography in which specialized supervision is offered. These, which cover a wide range of systematic areas, are listed in documents available from the Department.

33.4 Application Procedures

Applications will be considered upon receipt of:
1. application form;
2. transcripts;
3. two letters of reference for master’s; three for Ph.D.;
4. $100 application fee;
5. statement of proposed research;
6. official TOEFL or IELTS score (when necessary).

Dates for Guaranteed Consideration
For dates for guaranteed consideration, please consult the following website: www.mcgill.ca/gradapplicants/programs. Then select the appropriate program.

McGill’s online application form for graduate program candidates is available at www.mcgill.ca/gradapplicants/apply.

33.5 Program Requirements

Master’s Programs
Students must pass the courses specified for their program, attend such additional courses as the Chair and the student's thesis supervisor think fit, and submit a thesis in an appropriate area of geographical inquiry approved by the advisor.

M.A. in Geography (Thesis) (48 credits)
or
M.Sc. in Geography (Thesis) (48 credits)

Required Course (6 credits)
GEOG 631 (6) Methods of Geographical Research

Complementary Courses (12 credits)
12 credits, four 3-credit courses at the 500 level or above selected according to guidelines of the Department.

Thesis Component – Required (30 credits)
GEOG 698 (6) Thesis Proposal
GEOG 699 (24) Thesis Research

M.A. in Geography (Thesis) – Environment
Option/Concentration (48 credits)

or
M.Sc. in Geography (Thesis) – Environment
Option/Concentration (48 credits)

Required Courses (12 credits)
ENVR 610 (3) Foundations of Environmental Policy
ENVR 650 (1) Environmental Seminar 1
ENVR 651 (1) Environmental Seminar 2
ENVR 652 (1) Environmental Seminar 3
GEOG 631 (6) Methods of Geographical Research
Complementary Courses (12 credits)
9 credits of courses at the 500 level or higher selected according to guidelines of the Department.
3 credits, one of the following courses:
ENVR 519 (3) Global Environmental Politics
ENVR 544 (3) Environmental Measurement and Modelling
ENVR 580 (3) Topics in Environment 3
ENVR 611 (3) The Economy of Nature
ENVR 620 (3) Environment and Health of Species
ENVR 622 (3) Sustainable Landscapes
ENVR 630 (3) Civilization and Environment 1
ENVR 680 (3) Topics in Environment 4
or another course at the 500 level or higher recommended by the advisory committee and approved by the Environment Option Committee.

Thesis Component – Required (24 credits)
GEOG 698 (6) Thesis Proposal
GEOG 697 (18) Thesis Research (Environment Option)

M.A. in Geography (Thesis) – Neotropical Environment Option/Concentration (48 credits)
or
M.A. in Geography (Thesis) – Neotropical Environment Option/Concentration (48 credits)

Required Courses (12 credits)
BIOL 640 (3) Tropical Biology and Conservation
ENVR 610 (3) Foundations of Environmental Policy
GEOG 631 (6) Methods of Geographical Research

Complementary Courses (6 credits)
3 credits, one Geography graduate course, and
3 credits, one of the following courses:
AGRI 550 (3) Sustained Tropical Agriculture
BIOL 553 (3) Neotropical Environments
BIOL 641 (3) Issues in Tropical Biology
ENVR 611 (3) The Economy of Nature
ENVR 612 (3) Tropical Environmental Issues
ENVR 680 (3) Topics in Environment 4
POLI 644 (3) Tropical Environmental Politics
SOCI 565 (3) Social Change in Panama

Thesis Component – Required (30 credits)
GEOG 698 (6) Thesis Proposal
GEOG 699 (24) Thesis Research
Participation in the MSE-Panama Symposium presentation in Montreal is also required.

M.A. in Geography (Thesis) – Development Studies Option/Concentration (48 credits)
The Development Studies Option (DSO) is a cross-disciplinary M.A. program offered as an option within existing M.A. programs in the departments of Geography, History, Political Science, Anthropology, Economics, and Sociology. This thesis option is open to master's students specializing in development studies. Students enter through one of the participating departments and must meet the M.A. requirements of that unit. Students will take an interdisciplinary seminar and a variety of graduate-level courses on international development issues. The M.A. thesis must be on a topic relating to development studies, approved by the DSO coordinating committee.

Required Courses (9 credits)
GEOG 631 (6) Methods of Geographical Research
INTD 657 (3) Development Studies Seminar

Complementary Courses (9 credits)
9 credits of courses at the 500 level or higher related to geography and international development studies to be chosen in consultation with an advisor.

Thesis Component – Required (30 credits)
GEOG 698 (6) Thesis Proposal
GEOG 699 (24) Thesis Research

M.A. in Geography (Thesis) – Gender and Women’s Studies Option/Concentration (48 credits)
The Graduate option in Gender and Women’s Studies is an interdisciplinary program for students who meet the degree requirements in Geography who wish to earn 6 credits of approved coursework focusing on gender and women's studies, and issues in feminist research and methods. The student's M.A. thesis must be on a topic centrally relating to issues of gender and/or women's studies.

Required Courses (9 credits)
GEOG 631 (6) Methods of Geographical Research
WMST 601 (3) Feminist Theories and Methods

Complementary Courses (9 credits)
Two complementary substantive courses at the 500 level or above in Geography, and
WMST 602 (3) Feminist Research Symposium or one 3-credit graduate course on gender/women’s issues.

Thesis Component - Required (30 credits)
GEOG 698 (6) Thesis Proposal
GEOG 699 (24) Thesis Research
Note: Candidates for the M.A. degree follow an individual program approved by the Department.

M.A. in Geography (Thesis) – Social Statistics Option/Concentration (48 credits)

Required Courses (9 credits)
GEOG 631 (6) Methods of Geographical Research
GEOG 634 (3) Quantitative Methods in Geography

Complementary Courses (9 credits)
3 credits, one of the following courses:
ECON 668 (3) Seminar on Social Statistics
GEOG 634 (3) Quantitative Methods in Geography

M.A. in Geography (Thesis) – Social Statistics Option/Concentration (48 credits)

Required Courses (9 credits)
GEOG 631 (6) Methods of Geographical Research
GEOG 634 (3) Quantitative Methods in Geography

Complementary Courses (9 credits)
3 credits, one of the following courses:
ECON 668 (3) Seminar on Social Statistics
GEOG 634 (3) Quantitative Methods in Geography

Ph.D. Programs
Students must pass the courses specified for their program, attend such additional courses as the Chair and the student’s thesis supervisor think fit, and submit a thesis based on original research in an appropriate area.

Ph.D. in Geography
Required Course (6 credits)
GEOG 631 (6) Methods of Geographical Research

Complementary Courses (minimum 6 credits)
6 credits, two 3-credit graduate-level courses selected according to guidelines of the Department.

Comprehensives
GEOG 700 (0) Comprehensive Examination 1
GEOG 701 (0) Comprehensive Examination 2
GEOG 702 (0) Comprehensive Examination 3

Thesis
Ph.D. in Geography – Environment Option/Concentration

Required Courses (12 credits)

- ENVR 610 (3) Foundations of Environmental Policy
- ENVR 650 (1) Environmental Seminar 1
- ENVR 651 (1) Environmental Seminar 2
- ENVR 652 (1) Environmental Seminar 3
- GEOG 631 (6) Methods of Geographical Research

Complementary Courses (9 credits)

6 credits of courses at the 500 level or higher selected according to guidelines of the Department.

3 credits, one of the following courses:

- ENVR 620 (3) Environment and Health of Species
- ENVR 622 (3) Sustainable Landscapes
- ENVR 630 (3) Civilization and Environment 1
- ENVR 680 (3) Topics in Environment 4

or another course at the 500 level or higher recommended by the advisory committee and approved by the Environment Option Committee.

Comprehensives

GEOG 700 (0) Comprehensive Examination 1
GEOG 701 (0) Comprehensive Examination 2
GEOG 702 (0) Comprehensive Examination 3

Thesis

Participation in the MSE-Panama Symposium presentation in Montreal is also required.

Ph.D. in Geography – Gender and Women’s Studies Option/Concentration

The Graduate option in Gender and Women’s Studies is an interdisciplinary program for students who meet the degree requirements in Geography who wish to earn 9 credits of approved coursework focusing on gender and women’s studies, and issues in feminist research and methods. The student’s doctoral thesis must be on a topic centrally related to issues of gender and/or women’s studies.

Required Courses (12 credits)

- GEOG 501 (3) Geographical Research
- WMST 601 (3) Feminist Theories and Methods
- WMST 602 (3) Feminist Research Symposium or
- WMST 603 (3) Feminist Methods

Complementary Courses (6 credits)

Two complementary substantive courses. One of these two courses must be taken within the Department of Geography at the 500 level or above; one of the two courses must be on gender/women’s issues at the 500, 600 or 700 level.

Comprehensives

GEOG 700 (0) Comprehensive Examination 1
GEOG 701 (0) Comprehensive Examination 2
GEOG 702 (0) Comprehensive Examination 3

Thesis

The topic must be centrally related to issues of gender and/or women’s studies.

Ph.D. in Geography – Neotropical Environment Option/Concentration

Required Courses (12 credits)

- BIOL 640 (3) Tropical Biology and Conservation
- ENVR 610 (3) Foundations of Environmental Policy
- GEOG 631 (6) Methods of Geographical Research

Complementary Courses (3 credits)

3 credits, one of the following courses:

- AGRI 550 (3) Sustained Tropical Agriculture
- BIOL 553 (3) Neotropical Environments
- BIOL 641 (3) Issues in Tropical Biology

ENVR 611 (3) The Economy of Nature
ENVR 612 (3) Tropical Environmental Issues
ENVR 680 (3) Topics in Environment 4
POLI 644 (3) Tropical Environmental Politics
SOCI 565 (3) Social Change in Panama

Comprehensives

GEOG 700 (0) Comprehensive Examination 1
GEOG 701 (0) Comprehensive Examination 2
GEOG 702 (0) Comprehensive Examination 3

Thesis

Students preparing to register should consult Class Schedule on the web at www.mcgill.ca/student-records/register/class-schedule for the most up-to-date list of courses available; courses may have been added, rescheduled or cancelled after this Calendar was published. Class Schedule lists courses by term and includes days, times, locations, and names of instructors.

Term(s) offered (Fall, Winter, Summer) may appear after the credit weight to indicate when a course would normally be taught. Please check Class Schedule to confirm this information.

Note: All undergraduate courses administered by the Faculty of Science (courses at the 100 to 500 level) have limited enrolment. The course credit weight is given in parentheses after the title.

GEOG 500 GEOGRAPHY OF REGIONAL IDENTITY. (3) (Fall) (3 hours)
(Restriction: Graduate students and final year undergraduates and/or those who have taken GEOG 408) The response of diverse regional groups in Europe to the centripetal tendencies of national institutions. The course draws upon examples from a variety of European regions. Contemporary regional issues will be contextualised within a spatial framework of historical geography.

GEOG 501 MODELLING ENVIRONMENTAL SYSTEMS. (3) (Fall) (1.15 hours lecture, 0.58 hours seminar, 0.69 hours project, 0.58 hours laboratory) (Restriction: open only to U2 or U3 students who have completed six or more credits from courses at the 300 level of Atmospheric and Oceanic Sciences, Biology, Chemistry, Earth and Planetary Sciences, Geography, Natural Resource Sciences, or a McGill School of Environment domain, or permission of the instructor) (Prerequisites: MATH 139 or MATH 140, MATH 141, or a McGill School of Environment domain, or permission of the instructor) Analysis of the evolution of development policies and their spatial implications in circumpolar areas with an emphasis on the application of geographical concepts. Special attention is given to indigenous peoples and new immigrant populations in northern North America.

GEOG 502 GEOGRAPHY OF NORTHERN DEVELOPMENT. (3) (Fall) (3 hours) (Prerequisite (Undergraduate): GEOG 301 or GEOG 436, or permission of instructor) Analysis of the evolution of development policies and their spatial implications in circumpolar areas with an emphasis on the application of geographical concepts. Special attention is given to indigenous peoples and new immigrant populations in northern North America.

GEOG 503 LOCATION & SPATIAL DEVELOPMENT. (3) (Winter) (3 hours) (Prerequisites: GEOG 216 and GEOG 202, OR one course in each of microeconomics and macroeconomics, OR permission of instructor) Patterns of regional economic growth or decline explained in terms of the competitive behaviour of profit-maximising firms and utility-maximising households. Ideas, models, and evidence developed in competitive location theory.

GEOG 505 GLOBAL BIogeochecmistry. (3) (Winter) (2 hours and research) (Prerequisite: GEOG 305 or GEOG 322 and permission of instructor) An examination of the storage, transfers and cycling of major elements and substances, with an emphasis on the global
scale and the linkages between the atmosphere, hydrosphere, lithosphere and biosphere.

**GEOG 506 ADVANCED GEOGRAPHIC INFORMATION SCIENCE.** (3) (Winter) (2 hours and laboratory) (Prerequisite: Undergraduate) GEG 201 and GEG 307 and permission of instructor.) Critically analyse major themes in geographic information science and draw out the practical ramifications for spatial technologies and research. Topics such as spatial interoperability, data quality, scale, visualization, location-based services and ontologies are covered.

**GEOG 507 ADVANCED SOCIAL GEOGRAPHY.** (3) (Prerequisite: GEOG 301 or equivalent, and permission of instructor.) Current theories and themes in social geography, such as relations between society and space, social and spatial relations of inequality, difference and diversity, situated and embodied identities, social issues and problems, connections between society and nature, all within a spatial framework.

**GEOG 508 RESOURCES, PEOPLE AND POWER.** (3) (Fall) (3 hours) (Prerequisite: GEOG 408 or GEOG 410 or permission of instructor) Addresses how different groups of people struggle over natural resources and environmental change. Politics of conservation in resource-dependent local communities, struggles over resource access and character, questions of power, resistance, class, and gender, and to "nature" as a socially-constructed yet active player.

**GEOG 509 QUALITATIVE METHODS.** (3) (Winter) (Prerequisite: Permission of instructor.) Qualitative methods that geographers use and the debates surrounding their use; epistemological underpinnings of methodological choices.

**GEOG 510 HUMID TROPICAL ENVIRONMENTS.** (3) (Winter) (3 hours) (Prerequisite: GEOG 203 or equivalent and written permission of instructor) Focus on the environmental and human spatial relationships in tropical rain forest and savanna landscapes. Human adaptation to variations within these landscapes through time and space. Biophysical constraints upon "development" in the modern era.

**GEOG 513 BEHAVIOURAL GEOGRAPHY.** (3) (Prerequisite: GEOG 301 or equivalent, and permission of instructor) A course in introductory statistics. The development of behavioural approaches in geography. A survey of methods and findings in the area of environmental and spatial cognition, preference and choice behaviour. Models of disaggregate and aggregate travel demand.

**GEOG 522 ADVANCED ENVIRONMENTAL HYDROLOGY.** (3) (2 hours and 1 tutorial) (Prerequisite: GEOG 322, or permission of instructor) Cross-listed with CASN 300) Surface and shallow ground water determine the availability of moisture and many chemical elements at the Earth's surface. This course discusses the link between surface water and ground water flow systems and the role this link plays in stream flow production and biogeochemical cycling in lake, riparian and terrestrial ecosystems.

**GEOG 523 GLOBAL ECOSYSTEMS AND CLIMATE.** (3) (Fall) (3 hours) (Prerequisites: GEOG 203 and 321 or equivalent, or permission of the instructor) Linkages and feedbacks among climate, ecosystems, and human land use at global scales. How global-scale ecological processes (primary production, carbon cycle, etc.) are driven by variations in climate and land use practices such as agriculture and deforestation. How natural and human-modified ecosystems exchange carbon and water with the atmosphere.

**GEOG 535 REMOTE SENSING AND INTERPRETATION.** (3) (Winter) (3 hours) (Prerequisites: GEOG 306 and written permission of instructor) Basic photogrammetry and interpretation procedures for aircraft and space craft photography and imagery.

**GEOG 536 GEOCRYOLOGY.** (3) (Fall) (3 hours) (Prerequisite: GEOG 272 and any 300-level geomorphology course approved by instructor) Study of the unique geomorphic aspects of periglacial and permafrost environments. The focus will be on processes in cold climates, the impact of human activity on permafrost landscapes and potential impacts of climatic change.

**GEOG 537 ADVANCED FLUVIAL GEOMORPHOLOGY.** (3) (Winter) (Prerequisite: Undergraduate; permission of instructor) An examination of current advances in fluvial geomorphology: sediment entrainment and transport, alluviation and river channel evolution.

**GEOG 540 TOPICS IN GEOGRAPHY 1.** (3) (Fall) (Prerequisite: Permission of instructor.) (Note: This course is offered on an irregular basis. See Geography website (www.geog.mcgill.ca) for current status.) In-depth review of a current topic in physical geography.

**GEOG 541 TOPICS IN GEOGRAPHY 2.** (3) (Prerequisite: Permission of instructor.) (Note: This course is offered on an irregular basis. See Geography website (www.geog.mcgill.ca) for current status.) In-depth review of a current topic in physical geography.

**GEOG 542 ADVANCED STUDIES IN GEOGRAPHY 1.** (1) (Prerequisite: Permission of instructor.) (Note: This course is offered on an irregular basis. See Geography website (www.geog.mcgill.ca) for current status.) Intensive review of a current topic or technique in physical geography.

**GEOG 543 ADVANCED STUDIES IN GEOGRAPHY 2.** (1) (Prerequisite: Permission of instructor.) (Note: This course is offered on an irregular basis. See Geography website (www.geog.mcgill.ca) for current status.) Intensive review of a current topic or technique in human geography.

**GEOG 550 HISTORICAL ECOLOGY TECHNIQUES.** (3) (Fall) (2 hours, laboratory and seminar) (Prerequisite: GEOG 350 or BIOL 215 or PLNT 460 or permission of instructor.) Principles and methods of Quaternary paleoecology and vegetation reconstruction. Examination of ecosystem response to human disturbance and environmental change.

**GEOG 551 ENVIRONMENTAL DECISIONS.** (3) (Fall) (2 hours seminar, 1 hour tutorial) (Prerequisites: GEOG 302, GEOG 306 or equivalents) This course deals with the role of geographic information, paradigms and modes of analysis - including but not restricted to GIS - in environmental impact assessment and decision making. The focus will be on community-based decision making, particularly where conservation issues are involved. Cross-cultural situations, developing areas and the role of non-government organizations.

**GEOG 555 ECOLOGICAL RESTORATION.** (3) (Prerequisites: GEOG 350 or BIOL 308 or PLNT 460 and permission of instructor.) (Note: Requires participation in a field trip over reading week. Offered in alternate years.) A broad overview of ecological restoration. Consider causes of environmental degradation, why and what we restore, how restoration goals are set, and standards in restoration practice, as well as critiques and philosophies of ecological restoration, such as "ecocultural" restoration.

**GEOG 602 URBAN GEOGRAPHY: SELECTED TOPICS.** (3) Social and historical aspects of the urban environment.

**GEOG 608 CULTURAL GEOGRAPHY PART 1.** (3) Cultural ecology with particular reference to changing peasant/plantation relations; space needs of native peoples in relation to land claims.

**GEOG 610 SOCIAL GEOGRAPHY: SELECTED TOPICS.** (3) Approaches to the study of human-constructed landscapes, including issues of ethnicity, social networks and social metaphors/tropes.

**GEOG 613 ADVANCED BIOGEOGRAPHY.** (3)

**GEOG 625 SPECIAL TOPICS IN HUMAN GEOGRAPHY.** (3) An examination of recent advances in human geography.

**GEOG 626 SPECIAL TOPICS IN PHYSICAL GEOGRAPHY.** (3) An examination of recent advances in physical geography.

**GEOG 631 METHODS OF GEOGRAPHICAL RESEARCH.** (6) General research seminar in human and physical geography.

**GEOG 631D1 (3), GEOG 631D2 (3) METHODS OF GEOGRAPHICAL RESEARCH.** (Students must register for both GEOG 631D1 and GEOG 631D2) (No credit will be given for this course unless both GEOG 631D1 and GEOG 631D2 are successfully completed in consecutive terms) General research seminar in human and physical geography.
GEOG 631N1 METHODS OF GEOGRAPHICAL RESEARCH. (3) (Students must also register for GEOG 631N2) (No credit will be given for this course unless both GEOG 631N1 and GEOG 631N2 are successfully completed in a twelve month period) (GEOG 631N1 and GEOG 631N2 together are equivalent to GEOG 631) General research seminar in human and physical geography.

GEOG 631N2 METHODS OF GEOGRAPHICAL RESEARCH. (3) (Prerequisite: GEOG 631N1) (No credit will be given for this course unless both GEOG 631N1 and GEOG 631N2 are successfully completed in a twelve month period) (GEOG 631N1 and GEOG 631N2 together are equivalent to GEOG 631) Independent research under the supervision of a research director.

GEOG 697 THESIS RESEARCH (ENVIRONMENT OPTION). (18) Independent research under the supervision of a research director.

GEOG 698 THESIS PROPOSAL. (6) Preparation and evaluation of thesis proposal.

GEOG 698D1 (3), GEOG 698D2 (3) THESIS PROPOSAL. (Students must register for both GEOG 698D1 and GEOG 698D2) (No credit will be given for this course unless both GEOG 698D1 and GEOG 698D2 are successfully completed in consecutive terms) (GEOG 698D1 and GEOG 698D2 together are equivalent to GEOG 698) Preparation and evaluation of thesis proposal.

GEOG 699N1 THESIS PROPOSAL. (3) (Students must also register for GEOG 699N2) (No credit will be given for this course unless both GEOG 699N1 and GEOG 699N2 are successfully completed in a twelve month period) (GEOG 699N1 and GEOG 699N2 together are equivalent to GEOG 699) Preparatory work for the preparation of thesis proposal.

GEOG 699N2 THESIS PROPOSAL. (3) (Prerequisite: GEOG 699N1) (No credit will be given for this course unless both GEOG 699N1 and GEOG 699N2 are successfully completed in consecutive terms) (GEOG 699N1 and GEOG 699N2 together are equivalent to GEOG 699) Preparation and evaluation of thesis proposal.

GEOG 699 THESIS RESEARCH. (24) Independent research under the supervision of a research director.

GEOG 699D1 (12), GEOG 699D2 (12) THESIS RESEARCH. (Students must register for both GEOG 699D1 and GEOG 699D2) (No credit will be given for this course unless both GEOG 699D1 and GEOG 699D2 are successfully completed in consecutive terms) (GEOG 699D1 and GEOG 699D2 together are equivalent to GEOG 699) Independent research under the supervision of a research director.

GEOG 699N1 THESIS RESEARCH. (12) (Students must also register for GEOG 699N2) (No credit will be given for this course unless both GEOG 699N1 and GEOG 699N2 are successfully completed in a twelve month period) (GEOG 699N1 and GEOG 699N2 together are equivalent to GEOG 699) Independent research under the supervision of a research director.

GEOG 699N2 THESIS RESEARCH. (12) (Prerequisite: GEOG 699N1) (No credit will be given for this course unless both GEOG 699N1 and GEOG 699N2 are successfully completed in a twelve month period) (GEOG 699N1 and GEOG 699N2 together are equivalent to GEOG 699) Independent research under the supervision of a research director.

GEOG 700 COMPREHENSIVE EXAMINATION 1. (0)

GEOG 700D1 (0), GEOG 700D2 (0) COMPREHENSIVE EXAMINATION 1. (Students must register for both GEOG 700D1 and GEOG 700D2) (No credit will be given for this course unless both GEOG 700D1 and GEOG 700D2 are successfully completed in consecutive terms) (GEOG 700D1 and GEOG 700D2 together are equivalent to GEOG 700)

GEOG 701 COMPREHENSIVE EXAMINATION 2. (0)

GEOG 701D1 (0), GEOG 701D2 (0) COMPREHENSIVE EXAMINATION 2. (Students must register for both GEOG 701D1 and GEOG 701D2) (No credit will be given for this course unless both GEOG 701D1 and GEOG 701D2 are successfully completed in consecutive terms) (GEOG 701D1 and GEOG 701D2 together are equivalent to GEOG 701)

GEOG 702 COMPREHENSIVE EXAMINATION 3. (0)

GEOG 702D1 (0), GEOG 702D2 (0) COMPREHENSIVE EXAMINATION 3. (Students must register for both GEOG 702D1 and GEOG 702D2) (No credit will be given for this course unless both GEOG 702D1 and GEOG 702D2 are successfully completed in consecutive terms) (GEOG 702D1 and GEOG 702D2 together are equivalent to GEOG 702)

ENVR 540 ECOLOGY OF SPECIES INVASIONS. (3) (Winter) (3 hours lecture) (Prerequisite: BIOL 308 or permission of instructor.) (Restrictions: Not open to U1 or U2 students. Not open to students who are taking or have taken BIOL 540.) Causes and consequences of biological invasion, as well as risk assessment methods and management strategies for dealing with invasive species.

ENVR 580 TOPICS IN ENVIRONMENT 3. (3) (Prerequisite: Permission of instructor) Advanced-level seminars and discussion of interdisciplinary aspects of current problems in environment led by staff and/or special guests. This course is offered on an irregular basis.

ENVR 585 READINGS IN ENVIRONMENT 2. (3) (Prerequisites: ENVR 400 and ENVR 401, or permission of instructor) Interdisciplinary literature project/essays related to environment, enabling advanced-level study under guidance of qualified MSc staff in areas outside the scope of individual departments. Proposed topic and method of evaluation must be approved by the Associate Director one month before the beginning of term. Contact the Program Advisor for information.

ENVR 610 FOUNDATIONS OF ENVIRONMENTAL POLICY. (3) (Restriction: Enrolment in the Graduate Environment Option or enrolment in the Neotropical Environment Option (NEO) or permission of the instructor.) Analysis of current environmental policies to reveal implicit and explicit assumptions regarding scientific methods, hypothesis testing, subject/object, causality, certainty, deities, health, development, North-South concerns for resources, commons, national sovereignty, equity. Discussion of implications of such assumptions for building future environmental policies.

ENVR 612 TROPICAL ENVIRONMENTAL ISSUES. (3) (Course will only be offered if enrolment is five students or more. Enrolment in the Neotropical Environment Option (NEO) or permission of the instructor) Interdisciplinary seminar presenting and comparing a variety of perspectives on environmental issues in Latin America. The course focuses on how different disciplines work collaboratively toward the resolution of environmental problems. Some issues include watershed management, bioprospecting and drug discovery, indigenous knowledge and the role of institutions in protecting biodiversity.

ENVR 680 TOPICS IN ENVIRONMENT 4. (3) (Restriction: students taking the Neotropical Environment Option.) (Prerequisite: Permission of Instructor) Seminars and discussion of advanced, interdisciplinary aspects of current problems in environment led by staff and/or special guests.

34 German Studies

Department of German Studies
688 Sherbrooke Street West, Suite 425
Montreal, QC H3A 3R1
Canada

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Fax: 514-398-1748
Email: german.studies@mcgill.ca
Website: www.mcgill.ca/german

Chair — K. Bauer
Director of Graduate Studies — TBA
5. test results (GRE recommended, TOEFL required of all applicants);
4. $100 application fee;
3. two letters of recommendation (in English or French);
2. two certified copies of all university transcripts; (all transcripts not in English or French must be accompanied by a certified English or French translation);
1. application form;

Dates for Guaranteed Consideration

34.3 Admission Requirements

Master’s
In order to be admitted to the M.A. program in German Studies, candidates must have at least a B.A. degree in German from McGill University or an equivalent degree from another college or university of recognized standing.

Applicants with joint degrees or Majors degrees may be admitted on individual merit but they may be required to take additional courses. They may also be able to enter the program as qualifying students for the purpose of completing these preliminary studies.

In order to pursue graduate studies in German, all candidates must have considerable fluency in German, as all courses are given in German.

Graduate students holding a Language Instructorship or who are otherwise employed will normally not be allowed to take more than four courses a year. Students may be required to attend an approved course in English if their knowledge of that language is judged inadequate. All graduate students are expected to attend the staff-student colloquium.

Ph.D.
M.A. or equivalent.

34.4 Application Procedures

1. application form;
2. two certified copies of all university transcripts; (all transcripts not in English or French must be accompanied by a certified English or French translation);
3. two letters of recommendation (in English or French);
4. $100 application fee;
5. test results (GRE recommended, TOEFL required of all 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). Minimum score of 86, with each component score not less than 20, required on the internet-based TOEFL examination. Proof of TOEFL must be presented at time of application or shortly thereafter);
6. writing sample;
7. statement of academic intent.

All information is to be submitted directly to the Graduate Coordinator in the Department of German Studies.

34.5 Program Requirements

M.A. in German (Thesis) (48 credits)

Complementary Courses (18 credits)

Six 3-credit courses chosen from any graduate seminar listed as offered in the Department of German Studies. With the approval of the Graduate Studies Committee, students are normally permitted to take a maximum of 3 credits in another department.

Thesis Component – Required (30 credits)

GERM 690 (9) Thesis Research 1
GERM 691 (9) Thesis Research 2
GERM 692 (12) Thesis Research 3

Originality of research is not required for the thesis, but the student must show a critical understanding of the subject as demonstrated by the logical development of an argument which is supported by adequate documentation.

Students are expected to complete degree requirements in two years. They are expected to begin work on their thesis before the end of the first session. The thesis should demonstrate ability to organize the material under discussion, and should be succinct and relevant.

M.A. in German (Non-Thesis) (45 credits)

Required Courses (18 credits)

GERM 680 (6) Research Paper 1
GERM 681 (6) Research Paper 2
GERM 682 (6) Research Paper 3

Complementary Courses (27 credits)

Nine 3-credit courses chosen from any graduate seminar listed as offered in the Department of German Studies. With the approval of the Graduate Studies Committee, students are permitted to take a maximum of 3 credits in another department.

Ph.D.
Requirements:

Coursework – 8 three-credit courses (24 credits); with the approval of the Graduate Studies Committee, students are permitted to take a maximum of 6 credits in another department.

Comprehensive examinations (oral and written) (GERM 701). French Language examination or Latin (if specializing in German Literature before 1600).

Thesis

Thesis Defence.

Original research leading to new insights is a prerequisite for the acceptance of a Ph.D. thesis.

As a rule, it will take a candidate at least three years after the M.A. degree to complete the requirements for the Ph.D. degree. Students who have not spent an appreciable length of time in a German-speaking country are advised to spend one year at a university in such a country, for which credit may be given in the above program.

34.6 Courses

Students preparing to register should consult Class Schedule on the web at www.mcgill.ca/student-records/register/class-schedule for the most up-to-date list of courses available; courses may have been added, rescheduled or cancelled after this Calendar was published. Class Schedule lists courses by term and includes days, times, locations, and names of instructors.

The course credit weight is given in parentheses after the title.
GERM 680 RESEARCH PAPER 1. (6)  
GERM 681 RESEARCH PAPER 2. (6)  
GERM 682 RESEARCH PAPER 3. (6)  
GERM 690 THESIS RESEARCH 1. (9)  
GERM 691 THESIS RESEARCH 2. (9)  
GERM 692 THESIS RESEARCH 3. (12)  
GERM 701 PH.D. COMPREHENSIVE EXAMINATION. (0)  
GERM 790 PH.D. LANGUAGE REQUIREMENT. (0)  

35 Hispanic Studies

Department of Hispanic Studies  
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Telephone: 514-398-6683  
Fax: 514-398-1748  
Email: hispanic.studies@mcgill.ca  
Website: www.arts.mcgill.ca/hispanic  

Chair — A. Holmes  
Chair of Graduate Program — J. Pérez-Magallón

35.1 Staff

Professors  
J. Pérez-Magallón; Lic.Fil.(Barcelona), Ph.D.(Penn.)  
K. Sibbald; M.A.(Can.), M.A.(Liv.), Ph.D.(McG.)  

Associate Professor  
D.A. Boruchoff; A.B., A.M., Ph.D.(Harv.)  
A. Holmes; B.A.(McG.), M.A., Ph.D.(Oregon)  

Assistant Professors  
J.R. Jouvé-Martin; Lic.Fil.(Madrid), Ph.D.(G’town) (on sabbatical Fall 2009)  
F. Macchi; Lic.Lit.(Buenos Aires), M.A.(Ore.), Ph.D.(Yale)

35.2 Programs Offered

M.A. and Ph.D. in Hispanic Studies.

The Department of Hispanic Studies is committed to the disciplined study of all aspects of the literature, intellectual history and culture of Spain and Latin America, as well as the Spanish and Portuguese languages.

Research interests focus on both the cluster of Golden Age, Viceregal America and Enlightenment studies, as well as specializations in contemporary Spain and Hispanic America.

A limited number of language instructorships are available each year and those interested should apply c/o the Graduate Coordinator.

35.3 Admission Requirements

M.A. Degree (Non-Thesis or Thesis)  
(Currently, students are only admitted to the Thesis option in exceptional circumstances.)

In order to be admitted to graduate work in Hispanic Studies, candidates must fulfill the following prerequisites:

a) Candidates must possess a B.A. degree with Honours or, in certain cases, Joint Honours in Hispanic Studies from McGill University, or an equivalent degree from another college or university of recognized standing.

b) Candidates who do not possess the above prerequisites may, with special permission, enter the Department as Qualifying students for the purpose of completing these preliminary studies. They may have to take, among other courses, HISP 550, Comprehensive Examination.

Students may be required to attend an approved course in English or French if their knowledge of either language is deemed inadequate.

Prospective candidates may certainly express their preference but should note that the Graduate Committee of the Department of Hispanic Studies reserves the right to determine which of the two options (Thesis/Non-Thesis) students admitted to the M.A. program will be permitted to pursue and/or continue to completion.

Ph.D. Degree

Applicants must normally possess an M.A. in Hispanic Studies, or in a related discipline, from a university of recognized standing. These applicants will be admitted to Ph.D. 2 and follow the program requirements listed below. Exceptionally qualified candidates may apply to enter into Ph.D. 1 directly from the B.A. Honours, and will be required to complete an additional 6 three-credit courses above those listed below.

Applicants must demonstrate proficiency in Spanish, and when appropriate in Portuguese, plus a working knowledge of either French or English.

Applicants should submit samples of research papers that they have completed during the course of their previous studies. Submission of the results of the Graduate Record Examination is also encouraged.

35.4 Application Procedures

Applications will be considered upon receipt of:

1. duly completed application form;
2. two certified copies of all university transcripts (all transcripts not in English or French must be accompanied by a certified English or French translation);
3. two letters of recommendation (in English or French);
4. $100 application fee;
5. 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 TOEFL scores. Minimum score of 86, with each component score not less than 20, required on the internet-based TOEFL examination. Proof of TOEFL must be presented at time of application or shortly thereafter;
6. a sample of recent written work;
7. statement of academic intent.

All information should be submitted directly to the Graduate Coordinator.

Dates for Guaranteed Consideration

For dates for guaranteed consideration, please consult the following website: www.mcgill.ca/gradapplicants/programs. Then select the appropriate program.

McGill’s online application form for graduate program candidates is available at www.mcgill.ca/gradapplicants/apply.

35.5 Program Requirements

Master’s Programs

The Graduate Committee of the Department of Hispanic Studies reserves the right to determine which of the two options (thesis and non-thesis) students admitted to the M.A. will be permitted to pursue and/or continue to completion.

All general regulations of Graduate and Postdoctoral Studies shall apply regarding the M.A. degree.
M.A. in Hispanic Studies (Non-Thesis) (48 credits)
All candidates pursuing the M.A. without thesis, both full- and part-time, must successfully complete at least one of their Guided Research projects during the first 12 months.

All candidates pursuing the M.A. without thesis must complete HISP 615. Candidates choosing to focus their research on the literature of Spain will take HISP 616. Those wishing to specialize in the literature of Spanish America will take HISP 617.

In accordance with the regulations established by Graduate and Postdoctoral Studies, students in non-thesis programs who do not take at least 12 credits per term for the duration of the program are considered to proceed toward their degree on a part-time basis.

Required Courses (6 credits)
HISP 603 (3) Hispanic Bibliography 1
HISP 604 (3) Hispanic Bibliography 2

Complementary Courses (24 credits)
Eight 3-credit graduate-level HISP courses.

Project (18 credits)
HISP 615 (9) Medieval and Golden Age Literature: Grp
HISP 616 (9) Modern and Contemporary Spanish Literature: Grp
or HISP 617 (9) Modern and Contemporary Spanish-American Literature: Grp

M.A. in Hispanic Studies (Thesis) (48 credits)
(Currently, students are only admitted to the Thesis option in exceptional circumstances)

Students admitted to this option normally pursue their studies on a full-time basis. The combination of three courses and one Thesis Preparation course will permit these students the 12 credits per term average that is required for most fellowships.

Complementary Courses (18 credits)
Six 3-credit graduate-level HISP courses, with a maximum of 6 credits from Special Topics courses: HISP 690 to 694.

Thesis Component – Required (30 credits)
HISP 695 (3) Thesis Preparation 1
HISP 696 (3) Thesis Preparation 2
HISP 697 (24) M.A. Thesis

Ph.D. Degree Requirements
1. Six 3-credit courses.
2. Proficiency in Spanish, and when appropriate in Portuguese, as well as a functional ability in French and English. A reading knowledge of a fourth language will be determined according to the needs of the candidate’s research program.
3. HISP 701 Ph.D. Comprehensive Examination, Oral and Written.
4. HISP 713 Research Seminar in Hispanic Studies.
5. Doctoral dissertation on an appropriate area of original research; thesis defense.

All courses, comprehensive examinations and language requirements will normally be completed before the dissertation topic is formally approved. A dissertation proposal should be submitted to the Graduate Committee of the Department of Hispanic Studies for approval no later than the end of the second year of full-time doctoral studies.

All general regulations of Graduate and Postdoctoral Studies regarding the Ph.D. degree shall apply.

Required Academic Activities: All candidates preparing their dissertation are required to give an annual formal presentation of their research to the Department, normally beginning in their third year of full-time doctoral studies.

35.6 Courses

Students preparing to register should consult Class Schedule on the web at www.mcgill.ca/student-records/register/class-schedule for the most up-to-date list of courses available; courses may have been added, rescheduled or cancelled after this Calendar was published. Class Schedule lists courses by term and includes days, times, locations, and names of instructors.

Note: All undergraduate courses administered by the Faculty of Arts (courses at the 100 to 500 level) have limited enrolment. The course credit weight is given in parentheses after the title.

HISP 603 Hispanic Bibliography 1. (3)
HISP 604 Hispanic Bibliography 2. (3)
HISP 615 Medieval and Golden Age Literature: Grp. (9) An investigation of the principal themes and critical issues in medieval and Golden-Age Spanish literature. Attention will also focus on a comparison with similar problems in colonial Spanish-American literature. Project.
HISP 695 Thesis Preparation 1. (3)
HISP 696 Thesis Preparation 2. (3)
HISP 697 M.A. Thesis. (24)
HISP 701 Ph.D. Comprehensive Examination. (0) (Restriction: Ph.D. students in the Department of Hispanic Studies only) Ph.D. Comprehensive examinations, both oral and written.
HISP 713 Research Seminar. (3) Doctoral-level research seminar exploring a variety of research topics.
HISP 790 Ph.D. Language Requirement. (0) (Restriction: For students in other departments)

36 History

Department of History
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Website: www.mcgill.ca/history

Chair — John E. Zucchi
Graduate Program Director — Gershon D. Hundert

36.1 Staff

Emeritus Professors
Michael P. Maxwell; B.A.(Sir G. Wms.), M.A., Ph.D.(McG.)
Desmond Morton; B.A.(R.M.C.), B.A., M.A.(Oxf.), Ph.D.(Lond.) (Hiram Mills Professor of History)
Albert Schachter; B.A.(McG.), D.Phil(Oxf.) (Hiram Mills Emeritus Professor of Classics)
36.3 Admission Requirements

General – CGPA minimum: 3.3 on 4.0; TOEFL minimum: 550 on the paper-based test (213 on the computer-based test, or 86 on the internet-based test, with each component score no less than 20).

Master in History

Normally, candidates are required to possess a B.A. (Honours) in History consisting of 60 credits in history. Students with other undergraduate history degrees (normally including serious research components) may be considered eligible. Applicants not satisfying these conditions, but otherwise judged worthy of serious consideration, will be asked to register in a Qualifying Program in which they undertake advanced undergraduate work.

Master in History – Development Studies Option

Students have the same admission requirements as above.

Master in History – European Studies Option

Students have the same admission requirements as above.

Master in History – Gender and Women’s Studies Option

Students have the same admission requirements as above.

Master in the History of Medicine

Candidates must have a background in either History – B.A. (Honours) or equivalent – or a degree in one of the health professions with some background in history or a willingness to do preparatory work in history are also encouraged to apply.

Ph.D. in History

Normally, M.A. in History. (Students choosing the field of History of Medicine normally enter with an M.A. in History of Medicine.)

36.4 Application Procedures

Dates for Guaranteed Consideration

For dates for guaranteed consideration, please consult the following website: www.mcgill.ca/gradapplicants/programs. Then select the appropriate program.

Note: We are not willing to consider any applications to be admitted for the Winter term.

Completed applications and supporting material must be submitted directly to the Graduate Coordinator by the dates for guaranteed consideration. Refer to the Department of History website for detailed information (www.mcgill.ca/history).

McGill’s online application form for graduate program candidates is available at www.mcgill.ca/gradapplicants/apply.

36.5 Program Requirements

M.A. Degree in History (45 credits)

The Department offers two options towards the M.A. degree, one with a thesis and the other without a thesis. Both options consist of 45 credits. The thesis option, composed of graduate seminars, plus a thesis, is normally completed within 2 years. The non-thesis option, composed of required courses, graduate seminars, plus a major research paper, is normally completed in three terms, or one calendar year (Fall, Winter and Summer).

M.A. in History (Thesis) (45 credits)

Complementary Courses (12 credits)

12 credits at the 500 level or higher.

No more than 6 credits may be taken outside the Department. Candidates for the M.A. degree follow an individual program approved by the Department.

Thesis Component – Required (33 credits)

HIST 698 (12) Thesis Research 3

260 2009-2010 Graduate and Postdoctoral Studies, McGill University
M.A. in History (Non-Thesis) (45 credits)

Required Courses (12 credits)
HIST 684 (3) Research Proposal
HIST 685 (3) Directed Research
HIST 686 (6) Bibliography Tutorial

Complementary Courses (18 credits)
18 credits at the 500 level or higher.

M.A. Degree in History of Medicine
(45 credits normally completed in one year)

The program requires the completion of 45 credits, composed of required courses, graduate seminars, plus a major research paper. The program is normally completed in three terms, or one calendar year (Fall, Winter and Summer).

M.A. in History of Medicine (Non-Thesis) (45 credits)

Required Courses (27 credits)
HIST 684 (3) Research Proposal
HIST 685 (3) Directed Research
HIST 686 (6) Bibliography Tutorial
HIST 687 (9) M.A. Paper 1
HIST 688 (6) M.A. Paper 2

Complementary Courses (18 credits)
18 credits at the 500 level or higher comprised of the following:
- 6 - 12 credits in History of Medicine courses below:
  - HIST 619 (3) Ancient Medicine Seminar 1
  - HIST 620 (3) Ancient Medicine Seminar 2
  - HIST 636 (3) Medieval Medicine Seminar 1
  - HIST 637 (3) Medieval Medicine Seminar 2
  - HIST 640 (3) Modern Medicine Seminar 1
  - HIST 641 (3) Modern Medicine Seminar 2
  - HSSM 604 (3) History of Medicine
- 6 - 12 credits in History (non-Medicine) courses;
- 0 - 6 credits may be taken outside the Department.

M.A. in History (Thesis) (45 credits)

Required Courses (15 credits)
HIST 696 (9) Thesis Research 1
HIST 697 (12) Thesis Research 2
HIST 698 (12) Thesis Research 3

Complementary Courses (18 credits)
9 credits relating to development studies;
6 credits relating to development studies
3 credits relating to the student’s program of study.

M.A. in History (Non-Thesis) – Development Studies Option (45 credits)

Required Courses (3 credits)
INTD 657 (3) Development Studies Seminar

Complementary Courses (9 credits)
9 credits relating to development studies;
6 credits relating to development studies
3 credits relating to the student’s program of study.

M.A. in History (Thesis) – Development Studies Option (45 credits)

Required Courses (15 credits)
HIST 696 (9) Thesis Research 1
HIST 697 (12) Thesis Research 2
HIST 698 (12) Thesis Research 3

M.A. in History (Non-Thesis) – European Studies Option
(45 credits)

Required Course (3 credits)
HIST 659 (3) Interdisciplinary Seminar in European Studies

Complementary Courses (9 credits)
9 credits at the 500 level or higher.

M.A. in History (Thesis) – European Studies Option (45 credits)

Required Course (3 credits)
HIST 659 (3) Interdisciplinary Seminar in European Studies

Complementary Courses (9 credits)
9 credits at the 500 level or higher.

M.A. in History (Non-Thesis) – European Studies Option (45 credits)

Required Courses (15 credits)
HIST 659 (3) Interdisciplinary Seminar in European Studies
HIST 684 (3) Research Proposal
HIST 685 (3) Directed Research
HIST 686 (6) Bibliography Tutorial

Complementary Courses (15 credits)
15 credits at the 500 level or higher selected as follows:
6 credits on European themes and issues;
No more than 3 credits may be taken outside the Department.
Candidates for the M.A. degree follow an individual program approved by the Department.
Research Paper – Required (15 credits)
HIST 687 (9) M.A. Paper 1
HIST 688 (6) M.A. Paper 2

Master in History – Gender and Women’s Studies
The Graduate option in Gender and Women’s Studies is an interdisciplinary program for students who meet the degree requirements in History who wish to earn 6 credits of approved coursework focusing on gender and women’s studies, and issues in feminist research and methods. The Department of History offers the option as either a Thesis or a Non-Thesis program. The student’s thesis or research paper must be on a topic centrally relating to issues of gender and/or women’s studies.

M.A. in History (Thesis) – Gender and Women’s Studies Option (45 credits)
Required Course (3 credits)
WMST 601 (3) Feminist Theories and Methods
Complementary Courses (9 credits)
9 credits at the 500 level or higher, selected as follows:
3 credits on gender-related issues;
No more than 3 credits may be taken outside the Department.
Candidates for the M.A. degree follow an individual program approved by the Department.
Thesis Component – Required (33 credits)
HIST 696 (9) Thesis Research 1
HIST 697 (12) Thesis Research 2
HIST 698 (12) Thesis Research 3

M.A. in History (Non-Thesis) – Gender and Women Studies Option (45 credits)
Required Courses (15 credits)
HIST 684 (3) Research Proposal
HIST 685 (3) Directed Research
HIST 686 (6) Bibliography Tutorial
WMST 601 (3) Feminist Theories and Methods
Complementary Courses (15 credits)
15 credits at the 500 level or higher selected as follows:
3 credits on gender-related issues;
No more than 3 credits may be taken outside the Department.
Candidates for the M.A. degree follow an individual program approved by the Department.
Research Paper – Required (15 credits)
HIST 687 (9) M.A. Paper 1
HIST 688 (6) M.A. Paper 2

Ph.D. Degree in History
Examination Requirements: Candidates are required to sit an oral comprehensive examination by May at the end of the 2nd term of the Ph.D. 2 year. The examination consists of:
HIST 702 Comprehensive Examination in Major Field.
HIST 703 Comprehensive Examination in First Minor Field.
HIST 704 Comprehensive Examination in Second Minor Field.
Candidates must consult with their Director of Studies at the beginning of their Ph.D. work in order to determine their fields.

Thesis: With the completion of the oral comprehensive examination, candidates may proceed with their doctoral dissertation. Each Ph.D. candidate will be expected to establish an advisory committee to assist in supervising the dissertation.

Language Requirements: Ph.D. candidates must offer one foreign language for examination purposes. The Department expects that candidates will have successfully demonstrated competence in the one required language by the end of their Ph.D. 3 year.

It is understood that candidates may need a reading knowledge of such other languages as are required for research purposes in their major field.

Candidates in the field of Medical History will prepare the major field for the Comprehensive Examination with a member of the Department of Social Studies of Medicine and the two minor fields with members of the Department of History. The thesis will normally be directed by the director of the major field. In all other respects, the same rules will apply to candidates in this area as apply to other Ph.D. students in History.

36.6 Courses
Students preparing to register should consult Class Schedule on the web at www.mcgill.ca/student-records/register/class-schedule for the most up-to-date list of courses available; courses may have been added, rescheduled or cancelled after this Calendar was published. Class Schedule lists courses by term and includes days, times, locations, and names of instructors.

Also visit our departmental website www.mcgill.ca/history/graduate/ma/current/seminars for seminars offered including topic information.

Courses with numbers ending D1 and D2 are taught in two consecutive terms (most commonly Fall and Winter). Students must register for both the D1 and D2 components. No credit will be given unless both components (D1 and D2) are successfully completed in consecutive terms.

Note: All undergraduate courses administered by the Faculty of Arts (courses at the 100 to 500 level) have limited enrolment. The course credit weight is given in parentheses after the title.

HIST 525 WOMEN, WORK AND FAMILY IN GLOBAL HISTORY. (3)
(Prerequisite: A 300- or 400-level course in women’s history or labour history or permission of instructor.) (Restriction: Restricted to students in History and Women’s Studies.) The shifting historical context of female labour and family in selected western and non-western countries; the interaction between labour and gender relations with special focus on women’s experiences on the shop floor and in the family.

HIST 530 U.S. FOREIGN RELATIONS. (3)
(Prerequisite: one course in U.S. history or permission of instructor.) (Restriction: Enrolment limit 25.) The history and historiography, approaches and interpretations, of American foreign relations from the pre-Revolutionary era to the present.

HIST 550 ANCIENT HISTORY: SEMINAR. (3) (Fall) (Prerequisite (Undergraduate): 6 credits at the 300 or 400 level in Ancient history or permission of instructor.) (Restriction: Honours students or advanced undergraduates who have permission of the instructor. Also open to graduate students.) Topics in ancient Mediterranean History, focusing on Greek and/or Roman society.

HIST 551 ANCIENT HISTORY: RESEARCH. (3) (Winter) (Prerequisite: HIST 550) (Restriction: Honours students or advanced undergraduates who have permission of the instructor. Also open to graduate students.) Research paper on a theme in ancient Mediterranean history.

HIST 552 INTERNATIONAL RELATIONS: SEMINAR. (3) (Prerequisite: Permission of instructor.) (Restrictions: Restricted to Graduate students and Honours students or advanced students who have
permission of the instructor.) Readings on and discussion of a theme in the history of international relations.

HIST 553 INTERNATIONAL RELATIONS: RESEARCH. (3) (Prerequisite: HIST 552) (Restrictions: Open only to students who have taken HIST 552 in the previous semester.) Supervised design of, research for and writing of a substantial paper on a theme in the history of international relations.

HIST 556 COLONIAL AMERICA: SEMINAR 1. (3) (Prerequisite: Permission of instructor.) (Restrictions: Restricted to Honours students or advanced undergraduates who have permission of the instructor. Not open to students who have taken HIST 481D1/D2.) Readings in and discussion of a theme in the history of Colonial America. Topics will change from year to year.

HIST 557 COLONIAL AMERICA: SEMINAR 2. (3) (Prerequisite: HIST 556) (Restrictions: Open only to students who have taken HIST 556 in the previous semester. Not open to students who have taken HIST 481D1/D2.) Supervised design, research and writing of a substantial research paper on a theme in the history of Colonial America.

HIST 560 WORLD HISTORY: SEMINAR. (3) (Prerequisite: Permission of instructor.) (Restrictions: Restricted to Graduate students and Honours students or advanced students who have permission of the instructor.) Readings on and discussion of a theme in world history.

HIST 561 WORLD HISTORY: RESEARCH. (3) (Prerequisite: HIST 560) (Restrictions: Open only to students who have taken HIST 560 in the previous semester.) Supervised design of, research for and writing of a substantial paper on a theme in world history.

HIST 565 MODERN BRITAIN: SEMINAR 1. (3) (Prerequisite: Permission of the instructor.) (Restrictions: Honours students or advanced undergraduates. Not open to students who have taken HIST 484D1/D2 and/or HIST 634D1/D2.) Readings in and discussion of a theme in Modern British history.

HIST 566 MODERN BRITAIN: SEMINAR 2. (3) (Prerequisite: HIST 565) (Restrictions: Not open to students who have taken HIST 484D1/D2 and/or HIST 634D1/D2.) Supervised design, research and writing of a substantial research paper on a theme in modern British history.

HIST 579 THE ARTS OF HEALING IN CHINA. (3) (Prerequisite (Undergraduate): At least two courses at the 300 level or above in East Asian history or permission of instructor) An historical perspective on the diverse arts of healing in China focusing on Key formations such as popular traditions, the emergence of classical medicine, the creation of Traditional Chinese medicine in modern China. Emphasis on healing as part of social, historical, intellectual, and cultural processes.

HIST 580D1 (3), HIST 580D2 (3) EUROPEAN AND NATIVE-AMERICAN ENCOUNTERS. (Prerequisite (Undergraduate): Permission of instructor. Priority is given to Graduate students) (Students must register for both HIST 580D1 and HIST 580D2.) (No credit will be given for this course unless both HIST 580D1 and HIST 580D2 are successfully completed in consecutive terms) This seminar will examine European and Native encounters throughout the Americas, from the late 15th century to the mid-nineteenth century. The aim is to introduce students to key primary sources related to contact, and to the methods used to interpret them.

HIST 581 THE ART OF WAR IN CHINA. (3) (Prerequisite (Undergraduate): at least two 300-level or above courses in East Asian history, or permission of instructor) A study of the historical development of military theory and practice from earliest times to 1911 from a variety of perspectives, technological, scientific, social, and cultural.

HIST 582 EUROPEAN INTELLECTUAL HISTORY. (3) (Prerequisite (Undergraduate): a previous course in European History or permission of instructor) A study of selected topics in 20th century French and European intellectual and cultural history and popular culture.

HIST 590 TOPICS: THE BRITISH EMPIRE. (3) (Prerequisite (Undergraduate): permission of instructor) Topics in the history of British formal and informal imperialism and the colonial encounter from the eighteenth to the twentieth centuries.

HIST 593D1 (3), HIST 593D2 (3) FRENCH ATLANTIC WORLDS: SEMINAR. (Prerequisite: HIST 538 or HIST 539 or HIST 215 or permission of instructor.) (Restriction: Restricted to graduate students and honours students or advanced students who have permission of instructor.) (Students must register for both HIST 593D1 and HIST 593D2.) (No credit will be given for this course unless both HIST 593D1 and HIST 593D2 are successfully completed in consecutive terms.) The emergence of French Atlantic Worlds from the fifteenth to the early nineteenth century. Regions include West Africa, Brazil, Canada, Acadia and the Caribbean. Themes will include transatlantic commerce and slavery, colonialism, and indigenous peoples, debates over citizenship and the Haitian Revolution.

HIST 594D1 (3), HIST 594D2 (3) SEMINAR IN EARLY MODERN BRITAIN. (Prerequisite: any university course in British history or consent of instructor) (Note: Topics will vary from year to year.) (Restriction: Undergraduate Honours students or Masters students in history.) (Students must register for both HIST 594D1 and HIST 594D2.) (No credit will be given for this course unless both HIST 594D1 and HIST 594D2 are successfully completed in consecutive terms) Topics in early modern British history.

HIST 595D1 (3), HIST 595D2 (3) SEMINAR: EARLY MODERN WESTERN EUROPE. (Prerequisite (Undergraduate): permission of instructor) (Students must register for both HIST 595D1 and HIST 595D2.) (No credit will be given for this course unless both HIST 595D1 and HIST 595D2 are successfully completed in consecutive terms) This course is intended to offer advanced analytical and research training in a selected theme in Western European history during the period from the Italian Renaissance to the French Revolution.

HIST 604D1 (3), HIST 604D2 (3) COLONIAL AMERICA. (Students must register for both HIST 604D1 and HIST 604D2) (No credit will be given for this course unless both HIST 604D1 and HIST 604D2 are successfully completed in consecutive terms)

HIST 610D1 (3), HIST 610D2 (3) SEMINAR: TOPICS - MEDIEVAL HISTORY. (Students must register for both HIST 610D1 and HIST 610D2) (No credit will be given for this course unless both HIST 610D1 and HIST 610D2 are successfully completed in consecutive terms).

HIST 612D1 (3), HIST 612D2 (3) GERMAN NATIONAL SOCIALISM. (Students must register for both HIST 612D1 and HIST 612D2) (No credit will be given for this course unless both HIST 612D1 and HIST 612D2 are successfully completed in consecutive terms).

HIST 613D1 (3), HIST 613D2 (3) TOPICS: CANADIAN SOCIAL HISTORY. (Students must register for both HIST 613D1 and HIST 613D2) (No credit will be given for this course unless both HIST 613D1 and HIST 613D2 are successfully completed in consecutive terms) A seminar covering topics in Canadian Social History which vary from year to year.

HIST 614D1 (3), HIST 614D2 (3) TOPICS: LATIN AMERICAN HISTORY. (Topic for 2006-07: TBA) (Students must register for both HIST 614D1 and HIST 614D2) (No credit will be given for this course unless both HIST 614D1 and HIST 614D2 are successfully completed in consecutive terms).

HIST 615D1 (3), HIST 615D2 (3) TOPICS IN ITALIAN HISTORY. (Students must register for both HIST 615D1 and HIST 615D2) (No credit will be given for this course unless both HIST 615D1 and HIST 615D2 are successfully completed in consecutive terms).

HIST 617 ANCIENT HISTORY RESEARCH METHODS. (3) Techniques, approaches, and strategies for conducting advanced research in ancient history.

HIST 618 READINGS IN EAST ASIAN HISTORY. (3)
HIST 628D1 (3), HIST 628D2 (3) TOPICS IN RUSSIAN HISTORY. (Students must register for both HIST 628D1 and HIST 628D2) (No credit will be given for this course unless both HIST 628D1 and HIST 628D2 are successfully completed in consecutive terms) A seminar covering topics in Russian History which vary from year to year.

HIST 631D1 (3), HIST 631D2 (3) TOPICS: U.S. SOCIAL HISTORY. (Students must register for both HIST 631D1 and HIST 631D2) (No credit will be given for this course unless both HIST 631D1 and HIST 631D2 are successfully completed in consecutive terms).

HIST 637 MEDIEVAL MEDICINE SEMINAR 2. (3) (Prerequisite: HIST 636.) Research paper on a theme in the history of medicine 400 to 1500.

HIST 640 MODERN MEDICINE SEMINAR 1. (3) (Fall) Reading in and discussion of a theme in the history of Western European medicine since 1700.

HIST 641 MODERN MEDICINE SEMINAR 2. (3) (Winter) (Prerequisite: HIST 640) Research paper on a theme in the history of Western European medicine since 1700.

HIST 655 TUTORIAL. (6) If a seminar is not available in a field judged necessary to complete the program, candidates may (with the consent of their Director of Studies and that of the Chair of the Graduate Committee) do tutorial work to replace a seminar.

HIST 655D1 (3), HIST 655D2 (3) TUTORIAL. (Students must register for both HIST 655D1 and HIST 655D2) (No credit will be given for this course unless both HIST 655D1 and HIST 655D2 are successfully completed in consecutive terms) (HIST 655D1 and HIST 655D2 together are equivalent to HIST 655) If a seminar is not available in a field judged necessary to complete the program, candidates may (with the consent of their Director of Studies and that of the Chair of the Graduate Committee) do tutorial work to replace a seminar.

HIST 656D1 (3), HIST 656D2 (3) TUTORIAL. (Students must register for both HIST 656D1 and HIST 656D2) (No credit will be given for this course unless both HIST 656D1 and HIST 656D2 are successfully completed in consecutive terms) (HIST 656D1 and HIST 656D2 together are equivalent to HIST 656).

HIST 659 INTERDISCIPLINARY SEMINAR IN EUROPEAN STUDIES. (3) (Restriction: Only open to students in European Studies Option.) Interdisciplinary seminar on a theme relevant to the study of Europe.

HIST 668D1 (3), HIST 668D2 (3) JAPANESE INTELLECTUAL HISTORY. (Students must register for both HIST 668D1 and HIST 668D2) (No credit will be given for this course unless both HIST 668D1 and HIST 668D2 are successfully completed in consecutive terms)

HIST 673D1 (3), HIST 673D2 (3) PROBLEMS IN U.S. HISTORY. (Students must register for both HIST 673D1 and HIST 673D2) (No credit will be given for this course unless both HIST 673D1 and HIST 673D2 are successfully completed in consecutive terms)

HIST 677D1 (3), HIST 677D2 (3) SEMINAR: EUROPEAN JEWISH HISTORY. (Students must register for both HIST 677D1 and HIST 677D2) (No credit will be given for this course unless both HIST 677D1 and HIST 677D2 are successfully completed in consecutive terms).

HIST 678 HISTORIOGRAPHY. (3) This seminar examines the fundamentals of historical theory: developing a clear understanding of exactly why history has a “theory”. The philosophic language and modes of reasoning necessary to understand historical theory are introduced.

HIST 679 HISTORICAL METHODS. (3) An examination of the major approaches to historical interpretation through the reading of important works of historical scholarship.

HIST 680 GRADUATE COLLOQUIUM 1. (3) Selected topics in history and practical issues of professional development.

HIST 681 GRADUATE COLLOQUIUM 2. (3) (Prerequisite: HIST 680.) Selected topics in history and practical issues of professional development.

HIST 683D1 (3), HIST 683D2 (3) HISTORY OF MONTREAL. (Students must register for both HIST 683D1 and HIST 683D2) (No credit will be given for this course unless both HIST 683D1 and HIST 683D2 are successfully completed in consecutive terms)

HIST 684 RESEARCH PROPOSAL. (3) The development of research-related skills and the production of a research proposal under the supervision of a faculty member.

HIST 685 A.M. PAPER 1. (9) (Corequisite: HIST 684.) The development of research-related skills and the production of a research bibliography under the supervision of a faculty member.

HIST 686 A.M. PAPER 2. (6) (Corequisite: HIST 685.) Completion of the production of a research paper under the supervision of a faculty member.

HIST 691 M.A. RESEARCH PAPER 1. (6)

HIST 692 M.A. RESEARCH PAPER 2. (6)

HIST 693 M.A. RESEARCH PAPER 3. (9)

HIST 694 M.A. RESEARCH PAPER 4. (9)

HIST 696 THESIS RESEARCH 1. (9)

HIST 697 THESIS RESEARCH 2. (12)

HIST 698 THESIS RESEARCH 3. (12)

HIST 699 TUTORIAL. (3)

HIST 699D1 (1.5), HIST 699D2 (1.5) TUTORIAL. (Students must register for both HIST 699D1 and HIST 699D2) (No credit will be given for this course unless both HIST 699D1 and HIST 699D2 are successfully completed in consecutive terms) (HIST 699D1 and HIST 699D2 together are equivalent to HIST 699)

HIST 702D1 (0), HIST 702D2 (0) COMPREHENSIVE EXAMINATION - MAJOR FIELD. (Students must register for both HIST 702D1 and HIST 702D2) (No credit will be given for this course unless both HIST 702D1 and HIST 702D2 are successfully completed in consecutive terms) (HIST 702D1 and HIST 702D2 together are equivalent to HIST 702)

HIST 703D1 (0), HIST 703D2 (0) COMPREHENSIVE EXAMINATION - FIRST MINOR FIELD. (Students must register for both HIST 703D1 and HIST 703D2) (No credit will be given for this course unless both HIST 703D1 and HIST 703D2 are successfully completed in consecutive terms) (HIST 703D1 and HIST 703D2 together are equivalent to HIST 703)

HIST 704D1 (0), HIST 704D2 (0) COMPREHENSIVE EXAMINATION - SECOND MINOR FIELD. (Students must register for both HIST 704D1 and HIST 704D2) (No credit will be given for this course unless both HIST 704D1 and HIST 704D2 are successfully completed in consecutive terms) (HIST 704D1 and HIST 704D2 together are equivalent to HIST 704)

37 Human Genetics

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Telephone: 514-398-4198
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Email: thomas.leslie@mcgill.ca
Website: www.mcgill.ca/human genetics
37.1 Staff

Professors

E. Andermann; M.Sc., Ph.D., M.D.,C.M.(McG.) (Neurology and Neurosurgery)
V. Der Kaloustian; B.A.(Acad.), M.Sc., Ph.D., M.D.,C.M.(McG.), D.Sc.(Acad.), F.R.S.C., F.R.C.P.S.(C) (Pediatrics)
A. Duncan; B.Sc.(Qu.), Ph.D.(Edin.) (Pathology and Pediatrics)
K. Glass; M.A.(Barat), B.C.L., D.C.L.(McG.) (Pediatrics)
F. Glorieux; M.D.(Louvain), Ph.D.(McG.) (Surgery)
F. Kaplan; B.A.(Col.), Ph.D.(McG.) (Pediatrics)
K. Morgan; B.S., M.S., Ph.D.(Mich.) (Medicine)
P. Palmour; B.A.;(Texas W.), Ph.D.(Texas) (Psychiatry and Biology)
D. Radzioch; M.Sc., Ph.D.(Jagiellonian, Krakow) (Medicine)
D. Rosenblatt; M.D.,C.M.(McG.) (Medicine, Pediatrics and Biology)
R. Rozen; B.Sc., Ph.D.(McG.) (Pediatrics and Biology)
R. St-Arnaud; B.Sc.(Montr.), Ph.D.(Laval) (Surgery)
E. Schurr; M.Sc., Ph.D.(Albert-Ludwigs, Freiburg) (Medicine)
E. Shoubridge; B.Sc., M.Sc.(McG.), Ph.D.(Br. Col.) (Neurogenetics)
J. Trasler; M.D.,C.M., Ph.D.(McG.) (William Dawson Scholar) (Pathology and Pediatrics)

Associate Professors

A. Ao; Ph.D.(London) (OBS/GYN)
N. Braverman; B.Sc.(C'nell), M.Sc.(Sarah Lawrence), M.D.(Tulare) (Pediatrics)
T. Costa; M.D.(Ont.) (Pediatrics)
K. Dewer; Ph.D.(Laval) (Genome Quebec)
W. Foulkes; B.Sc., MB., BS., Ph.D.(Lond.) (Medicine)
K. Glass; D.C.L.(McG.) (Biomedical Ethics)
S. Melaçon; M.D.(Montr.)
R. Nadon; B.A., M.A., Ph.D.(C'dia)
L. Russell; B.A., M.D.(Indi.) (Pediatrics)
P. Tonn; B.Sc., M.Sc., Ph.D.(Tor.) (Medicine)
S. Vidal; Ph.D.(Genève) (Medicine)

Assistant Professors

D. Bartholdi; M.D.(Zürich)
L. Beitel; Ph.D.(McG.) (Biochemistry)
L. Cartier; B.Sc., M.Sc.(McG)
G. Chong; Ph.D.(Kansas)
M. Fujiwara; M.Sc.(Alta.) (Quantitative Genetics)
J. Majewski; B.Sc., M.Sc.(Stan.), Ph.D.(Wesl.)
P. Moffatt; Ph.D.(Montr.) (Pharmacology)
T. Pastinen; M.D., Ph.D.(Helsinki)
R. Sladek; B.Sc., M.D., Ph.D.(Tor.)
R. Slim; M.Sc.(Lebanon), M.Sc., Ph.D.(Paris VII)
M. Tischkowitz; M.D., Ph.D.(London) (Cancer Genetics)

Lecturers

N. Bolduc (Pediatrics), S.M. Chiu (Pediatrics), S. Drury (Pediatrics), J. Fitzpatrick (Pediatrics, Medicine), S. Fox (Medicine), L. Kasprzak (Medicine), M. Lalous (Medicine), L. Palma (Medicine), A. Secord (Pediatrics), G. Sillon (Medicine), N. Wong (Medicine), S. Zaor (Medicine)

Associate Members


37.2 Programs Offered

M.Sc. Degree (Genetic Counselling)

The M.Sc. in Genetic Counselling Program provides the academic foundation and clinical training required for the contemporary practice of genetic counselling. Genetic counsellors are health professionals who provide information and support to families who have members with birth defects or genetic disorders and to families who may be at risk for a variety of inherited conditions. Genetic counsellors investigate the problem present in the family, analyze inheritance patterns and risks of recurrence and review available options with the family. Some counsellors also work in administrative and academic capacities, and many engage in research activities. The curriculum includes a variety of required courses in Human Genetics and other departments and 40 weeks of supervised clinical training spread over 4 semesters. Graduates will be eligible to sit for both the Canadian Association of Genetic Counsellors and the American Board of Genetic Counselling certification examinations.

Enrolment will be limited to 4 students.

M.Sc. and Ph.D. Degrees in Human Genetics

The Department of Human Genetics offers research training at both the M.Sc. and Ph.D. levels. Both degrees require the completion of a thesis which is the major focus of the student's effort. A minimal amount of course work is required but specific course choices are flexible and vary according to the student's previous training and current research interest. The Department also offers a Bioinformatics option. Information on the Bioinformatics option can be found at: www.mcgill.ca/mcb/academic/graduate.

Most of the faculty of the Human Genetics Department are located in McGill teaching hospitals, reflecting the medically learned knowledge at the core of human genetic studies. Faculty have a wide variety of research interests which embrace; cancer genetics, cytogenetics, reproductive biology, neurogenetics, genomic and genetic basis of human diseases. Detailed information regarding faculty research interest can be found on the Department web page at www.mcgill.ca/human genetics/facultyandstaff/supervisors.

Students accepted into the Human Genetics graduate program will be paid a minimum of $15,000, plus tuition fees.

37.3 Admission Requirements

M.Sc. in Genetic Counselling

Prerequisites: Bachelor's degree – 3.0/4.0 or 3.2/4.0 for the last two full-time academic years. Recent (5 years or less) university-level courses in the Basic Sciences (basic biology, cell and molecular, biochemistry, principles of human genetics or basic genetics with a significant "human" component); and a minimum of two Social Sciences (social psychology, abnormal psychology).

Prerequisites or corequisites: Recent (5 years or less) university-level course in statistics.

Applicants must have obtained some experience (either paid or volunteer) working in a counselling or advisory capacity, ideally in a health care setting.

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 a TOEFL score of 600 on the TOEFL paper-based test (250 on the computer-based test or 100 on the internet-based test with each component score no less than 20) is the minimum standard for admission.
M.Sc. and Ph.D. in Human Genetics

Prerequisites: B.Sc. – minimum CGPA 3.0/4.0 or 3.2/4.0 for the last two full-time academic years. Applicants must have a minimum of 6 credits in cellular and molecular biology or biochemistry, 3 credits in mathematics or statistics and 3 credits in genetics. 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 a TOEFL score of 600 on the TOEFL paper-based test (250 on the computer-based test or 100 on the internet-based test) with each component score no less than 20, or 7 on the IELTS, is the minimum standard for admission.

Admission is based on an evaluation by the Graduate Training Committee and on acceptance by a research director who has agreed to provide adequate funding for personal and research expenses. Prospective graduate students are encouraged to contact staff members with whom they wish to study before applying for admission.

37.4 Application Procedures

M.Sc. in Genetic Counselling
Applications will be considered upon receipt of:
1. online application form, plus fee of $100;
2. two original transcripts;
3. two original letters of reference;
4. statement of purpose;
5. test results for international students: TOEFL or IELTS.

Documentation and online application must be received by February 1st. Interviews will be arranged during the weeks of March 1 – April 15 for the top 18 candidates. Admission to the program will be based on academic record, reference letters, statement of purpose and interview.

Application materials should be sent to Thomas Leslie at the departmental address above.

M.Sc. and Ph.D. in Human Genetics
Applications will be considered upon receipt of:
1. online application form, plus fee of $100;
2. two original transcripts;
3. two original letters of reference;
4. test results for international students: TOEFL or IELTS.

Dates for Guaranteed Consideration
For dates for guaranteed consideration, please consult the following website: www.mcgill.ca/gradapplicants/programs. Then select the appropriate program.

McGill’s online application form for graduate program candidates is available at www.mcgill.ca/gradapplicants/apply. Application materials should be sent to Thomas Leslie at the departmental address above.

37.5 Program Requirements

M.Sc. in Genetic Counselling (Non-Thesis)
Students must complete 48 credits for the M.Sc. in Genetic Counselling.

Required Courses – Phase I (Year 1) (24 credits)
HGEN 600D1 (3) Genetic Counselling Practicum
HGEN 600D2 (3) Genetic Counselling Practicum
HGEN 601 (3) Genetic Counselling Principles
HGEN 620D1 (4.5) Introductory Field Work Rotations
HGEN 620D2 (4.5) Introductory Field Work Rotations
HGEN 660 (3) Genetics and Bioethics
PATH 653 (3) Reading and Conference

Required Courses – Phase II (Year 2) (24 credits)
HGEN 610 (3) Genetic Counselling: Independent Studies 1
HGEN 611 (3) Genetic Counselling: Independent Studies 2
HGEN 630D1 (6) Advanced Field Work Rotations
HGEN 630D2 (6) Advanced Field Work Rotations
HGEN 640 (3) Clinical Genetics 1
HGEN 641 (3) Clinical Genetics 2

M.Sc. and Ph.D. in Human Genetics

The graduate program of each student is established and regularly evaluated by a two-member supervisory committee appointed by the Graduate Training Committee and chaired by the student’s thesis supervisor.

All graduate students are required to participate regularly in the various seminar series and journal clubs offered by the Department.

M.Sc. in Human Genetics (Thesis) (45 credits)

Length of Program – Three full-time terms of resident study at McGill University is the minimum time requirement to complete the master's degree. The normal and expected duration is 2¼ years.

Thesis – In Human Genetics, the M.Sc. degree is considered to be a research degree and the candidate must present a thesis which should contain original contributions to knowledge.

Transfer from M.Sc. to Ph.D. Program – The student’s Supervisory Committee may recommend to the Graduate Training Committee that the student be permitted to transfer to the Ph.D. program. This is normally done at the end of the first year of the master's program. Students who wish to transfer are required to take their Ph.D. Comprehensive Examination (HGEN 701) before doing so and must have completed HGEN 692 Human Genetics.

Required Courses (6 credits)
HGEN 662 (3) Laboratory Research Techniques
HGEN 692 (3) Human Genetics

Complementary Courses (6 credits)
6 credits chosen from the departmental offerings below or from 500-, 600- or 700-level courses offered in the Faculties of Medicine or Science:
HGEN 660 (3) Genetics and Bioethics
HGEN 661 (3) Population Genetics
HGEN 663 (3) Beyond the Human Genome
HGEN 670 (3) Advances in Human Genetics 1
HGEN 671 (3) Advances in Human Genetics 2
HGEN 672 (3) Advances in Human Genetics 3
HGEN 690 (3) Inherited Cancer Syndromes
HGEN 691 (3) Host Responses to Pathogens
HGEN 693 (3) Using Bioinformation Resources
HGEN 694 (3) Microarray Statistical Analysis
HGEN 695 (3) Psychiatric Genetics
HGEN 696 (3) Advanced Readings in Genetics 1
HGEN 697 (3) Advanced Readings in Genetics 2
HGEN 698 (3) Advanced Readings in Genetics 3
HGEN 699 (3) Advanced Readings in Genetics 4

Note: The Graduate Advisory Committee may stipulate additional course work at the 500, 600, or 700 level depending on the background of the candidate.

Thesis Component – Required (33 credits)
HGEN 680 (9) M.Sc. Thesis Research 1
HGEN 681 (12) M.Sc. Thesis Research 2
HGEN 682 (12) M.Sc. Thesis Research 3

M.Sc. in Human Genetics – Bioinformatics (Thesis) Option/Concentration (45 credits)
Required Courses (6 credits)
COMP 616D1/D2 (3) Bioinformatics Seminar
HGEN 692 (3) Human Genetics
Complementary Courses (6 credits)
6 credits from the following courses:
BINF 621 (3) Bioinformatics: Molecular Biology
BMDE 652 (3) Bioinformatics: Proteomics
BTEC 555 (3) Structural Bioinformatics
COMP 618 (3) Bioinformatics: Functional Genomics
PHGY 603 (3) Systems Biology and Biophysics

Note: The Graduate Advisory Committee may stipulate additional course work at the 500, 600, or 700 level depending on the background of the candidate.

Thesis Component – Required (33 credits)
HGEN 680 (9) M.Sc. Thesis Research 1
HGEN 681 (12) M.Sc. Thesis Research 2
HGEN 682 (12) M.Sc. Thesis Research 3

Ph.D. Requirements

Length of Program – Candidates entering Ph.D. 1 must complete at least three years of full-time resident study (6 terms). The normal and expected duration of the Ph.D. program is 4-5 years. A student who has obtained a master’s degree at McGill in a related field, or at an approved institution elsewhere, and is proceeding in the same subject towards a Ph.D. degree may, upon the recommendation of the Graduate Training Committee, enter at the Ph.D. 2 level.

Ph.D. Comprehensive Examination – The comprehensive exam is a format of evaluation of the student’s ability to proceed to the attainment of the Ph.D. Students must pass the Ph.D. Comprehensive Examination (HGEN 701) no later than 15 months from the date of registration in the program. Students who transfer from the master’s program must take the exam before doing so. Students who enter the Ph.D. program after completing an M.Sc. in Human Genetics at McGill must take the exam after 12 months.

Ph.D. Program
Requirements - In addition to thesis work, students are required to successfully complete HGEN 692. This 3-credit course may count towards the minimum requirements of 18 credits (6 semester courses) or 9 credits (entering Ph.D. after completing a master’s degree in a related field, 3 semester courses) for the Ph.D. program at the 500 level or higher with a passing grade of B- and an overall average of B. The course HGEN 692 must be successfully completed before the completion of the Ph.D. comprehensive examination, HGEN 701. A graduate pass (B- or better) is mandatory for all courses required for the Ph.D. program. Ph.D. students are also required to present a formal Ph.D. seminar before submitting their thesis.

Ph.D. in Human Genetics

Required Courses (3 credits)
HGEN 692 (6) Human Genetics
HGEN 701 (0) Ph.D. Comprehensive Examination

Complementary Courses (15 credits or 6 credits depending on admission status as described above)
Course are to be chosen from the list below and/or from among 500-, 600-, or 700-level courses offered in the Faculties of Medicine and Science.
HGEN 660 (3) Genetics and Bioethics
HGEN 661 (3) Population Genetics
HGEN 663 (3) Beyond the Human Genome
HGEN 690 (3) Inherited Cancer Syndromes
HGEN 691 (3) Host Responses to Pathogens
HGEN 693 (3) Using Bioinformation Resources
HGEN 694 (3) Microarray Statistical Analysis
HGEN 695 (3) Psychiatric Genetics
HGEN 696 (3) Advanced Readings in Genetics
HGEN 697 (3) Advanced Readings in Genetics 2
HGEN 698 (3) Advanced Readings in Genetics 3
HGEN 699 (3) Advanced Readings in Genetics 4

Students are restricted to taking any two of the following:
HGEN 670 (3) Advances in Human Genetics
HGEN 671 (3) Advances in Human Genetics 2
HGEN 672 (3) Advances in Human Genetics 3
Note: The Graduate Advisory Committee may stipulate additional course work depending on the background of the candidate.

Thesis

Ph.D. in Human Genetics – Bioinformatics
Option/Concentration

Required Courses (6 credits)
COMP 618 (3) Bioinformatics: Functional Genomics
BMDE 652 (3) Bioinformatics: Proteomics
BTEC 555 (3) Structural Bioinformatics
COMP 618 (3) Bioinformatics: Functional Genomics
PHGY 603 (3) Systems Biology and Biophysics

* Note: Students who enter in Ph.D. 1 will need to take an additional 6 credits of complementary courses chosen from the departmental offerings listed for the Ph.D. in Human Genetics and/or from among 500-, 600-, or 700-level courses in the Faculties of Medicine or Science.

Thesis

37.6 Courses

Students preparing to register should consult Class Schedule on the web at www.mcgill.ca/student-records/register/class-schedule for the most up-to-date list of courses available; courses may have been added, rescheduled or cancelled after this Calendar was published. Class Schedule lists courses by term and includes days, times, locations, and names of instructors.

Courses with numbers ending D1 and D2 are taught in two consecutive terms (most commonly Fall and Winter). Students must register for both the D1 and D2 components. No credit will be given unless both components (D1 and D2) are successfully completed in consecutive terms.

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

HGEN 600 GENETIC COUNSELLING PRACTICUM. (6) Designed for students enrolled in the M.Sc. in Genetic Counselling. Students will be taught how to take family histories, read pedigrees and the basic skills required for interviewing patients. Discussions with example cases. Attendance at Genetics Rounds is compulsory.

HGEN 600D1 (3), HGEN 600D2 (3) GENETIC COUNSELLING PRACTICUM. (Students must register for both HGEN 600D1 and HGEN 600D2) (No credit will be given for this course unless both HGEN 600D1 and HGEN 600D2 are successfully completed in consecutive terms) (HGEN 600D1 and HGEN 600D2 together are equivalent to HGEN 600) Designed for students enrolled in the M.Sc. in Genetic Counselling. Students will be taught how to take family histories, read pedigrees and the basic skills required for interviewing patients. Discussions with example cases. Attendance at Genetics Rounds is compulsory.

HGEN 601 GENETIC COUNSELLING PRINCIPLES. (3) Restriction: Restricted to students in the M.Sc. in Genetic Counselling Program. Theoretical foundations for the contemporary practice of genetic counselling and the role of the genetic counsellor in the health care delivery system. Topics include counselling theory and psychosocial counselling techniques, the clinical genetics evaluation and case management, and professional ethics, conduct and development.

HGEN 610 GENETIC COUNSELLING: INDEPENDENT STUDIES 1. (3) Students enrolled in the M.Sc. in Genetic Counselling will become
involved in an Independent Studies Project with a staff member. Students will also be responsible for specific assigned readings.

HGEN 610D1 (1.5), HGEN 610D2 (1.5) GENETIC COUNSELLING: INDEPENDENT STUDIES 1. (Students must register for both HGEN 610D1 and HGEN 610D2) (No credit will be given for this course unless both HGEN 610D1 and HGEN 610D2 are successfully completed in consecutive terms) (HGEN 610D1 and HGEN 610D2 together are equivalent to HGEN 610) Students enrolled in the M.Sc. in Genetic Counselling will become involved in an Independent Studies Project with a staff member. Students will also be responsible for specific assigned readings.

HGEN 611 GENETIC COUNSELLING: INDEPENDENT STUDIES 2. (3) Students enrolled in the two-year M.Sc. in Genetic Counselling program will complete an independent studies project with a staff member. Students will also be responsible for specific assigned readings.

HGEN 620 INTRODUCTORY FIELD WORK ROTATIONS. (9) Students are required to spend a minimum of 600 hours in field work. They will rotate through the various laboratories (cytogenetics, biochemical/molecular genetics) and clinical settings (prenatal diagnosis, screening, medical genetics) at the Montreal Children’s Hospital.

HGEN 620D1 (4.5), HGEN 620D2 (4.5) INTRODUCTORY FIELD WORK ROTATIONS. (Students must register for both HGEN 620D1 and HGEN 620D2) (No credit will be given for this course unless both HGEN 620D1 and HGEN 620D2 are successfully completed in consecutive terms) (HGEN 620D1 and HGEN 620D2 together are equivalent to HGEN 620) Students are required to spend a minimum of 600 hours in field work. They will rotate through the various laboratories (cytogenetics, biochemical/molecular genetics) and clinical settings (prenatal diagnosis, screening, medical genetics) at the Montreal Children’s Hospital.

HGEN 630D1 (6), HGEN 630D2 (6) ADVANCED FIELD WORK ROTATIONS. (Students must register for both HGEN 630D1 and HGEN 630D2) (No credit will be given for this course unless both HGEN 630D1 and HGEN 630D2 are successfully completed in consecutive terms) Students are required to spend a minimum of 600 hours in advanced clinical work. Students will rotate through the Division of Medical Genetics at the Montreal Children’s Hospital, in some of its disease-oriented clinics and screening programs; at the Neurogenetics Unit of the Montreal Neurological Hospital; and the Medical Genetics Divisions at the adult hospitals (Montreal General Hospital, Royal Victoria Hospital and the Sir Mortimer B. Davis-Jewish General Hospital).

HGEN 640 CLINICAL GENETICS 1. (3) This course is designed for students in the M.Sc. in Genetic Counselling program. The lectures will cover current topics in human/medical genetics (cytogenetics, biochemical genetics, molecular genetics, population genetics, etc.) related to clinical cases.

HGEN 641 CLINICAL GENETICS 2. (3) This course is designed for students in the M.Sc. in Genetic Counselling program. The lectures will cover current topics in human/medical genetics (cytogenetics, biochemical genetics, molecular genetics, population genetics, etc.) related to clinical cases.

HGEN 650 GENETIC COUNSELLING: READING PROJECT. (3) Students in the M.Sc. in Genetic Counselling will be assigned a Reading/Literature Search project on various topics: Bereavement, Pregnancy Loss, etc. Students will prepare and present information in seminar/discussion format.

HGEN 660 GENETICS AND BIOETHICS. (3) This course will deal with ethical issues in the gathering, dissemination, and use of genetic information for decisions concerning reproduction, health care, and research.

HGEN 661 POPULATION GENETICS. (3) Principles and concepts of the genetics of human populations.

HGEN 662 LABORATORY RESEARCH TECHNIQUES. (3) Directed training in selected methods. Form and content are flexible to allow the department to meet specific student demands and needs.

HGEN 670 ADVANCES IN HUMAN GENETICS 1. (3) This course will deal with recent progress in human genetics, and its applications to health care, by identifying different fields including different disciplines (e.g., cancer genetics, neurogenetics), different conceptual approaches, or different methodologic approaches.

HGEN 671 ADVANCES IN HUMAN GENETICS 2. (3) This course will deal with recent progress in human genetics, and its applications to health care, by identifying different fields including different disciplines (e.g., cancer genetics, neurogenetics), different conceptual approaches, or different methodologic approaches.

HGEN 672 ADVANCES IN HUMAN GENETICS 3. (3) This course will deal with recent progress in human genetics, and its applications to health care, by identifying different fields including different disciplines (e.g., cancer genetics, neurogenetics), different conceptual approaches, or different methodologic approaches.

HGEN 680 M.Sc. THESIS RESEARCH 1. (9) Independent research work under the direction of the Thesis Supervisor and the Supervisory Committee.

HGEN 681 M.Sc. THESIS RESEARCH 2. (12) Independent research work under the direction of the Thesis Supervisor and the Supervisory Committee.

HGEN 682 M.Sc. THESIS RESEARCH 3. (12) Independent research work under the direction of the Thesis Supervisor and the Supervisory Committee.

HGEN 690 INHERITED CANCER SYNDROMES. (3) The principles and practice associated with inherited predisposition to cancer (breast and colon cancers, example) such as the methods of gene discovery, clinical characteristics of inherited predisposition, methods of mutation analysis, genetic counselling, and ethical issues of genetic testing.

HGEN 691 HOST RESPONSES TO PATHOGENS. (3) Introduction to advanced concepts of host resistance to infectious diseases as they apply to both animal models and human populations.

HGEN 692 HUMAN GENETICS. (3) (Restriction: For Department of Human Genetics graduate students.) This course will emphasize the principles and practice of human genetics, including an overview of the fundamental aspects of human genetics pertaining to chromosomes and mutations, population, cancer and development genetics, the inheritance of complex traits.

HGEN 693 USING BIOINFORMATION RESOURCES. (3) (Restriction: For Department of Human Genetics graduate students.) This introductory course presents the conceptual underpinnings of statistical analysis for microarray gene expression data. Applied aspects of analysis will be emphasized, although students will be expected to become familiar with rudimentary equations.

HGEN 695 PSYCHIATRIC GENETICS. (3) (Prerequisites: BIOL 370 or HGEN 692 or an equivalent basic course in human genetics or permission of the instructor.) (Note: This course is aimed at students enrolled in the Department of Human Genetics graduate program. This course is also open to students from the Department of Psychiatry with permission. Permission is required from other disciplines as there is an expectation that graduate students have a basic knowledge of human heredity and genetic principles of human heredity (see course prerequisites) A seminar on current knowledge in the field of complex trait genetics as it applies to psychiatric disease.

HGEN 696 ADVANCED READINGS IN GENETICS 1. (3) (Note: Course enrolment is limited to 12 students) A review and discussion of specific topics in genetics (genetic models- population based, animal, and in vitro genetic models, genomics, and medical genetics) centered on current literature and latest advances in the field.
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38 Information Studies

School of Information Studies  
McLennan Library Building, Room MS 57F  
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Montreal, QC  H3A 1Y1  
Canada

Telephone: 514-398-4204  
Fax: 514-398-7193  
Email: sis@mcgill.ca  
Website: www.mcgill.ca/sis

Director — France Bouthillier

38.1 Academic Staff

Professors

J. Andrew Large; B.Sc.(Lond.), Ph.D.(Glas.), Dip.Lib.(Lond.)
(CN-Pratt-Grinstad Professor of Information Studies)
Peter F. McNally; B.A.(W. Ont.), B.L.S., M.L.S., M.A.(McG.)

Associate Professors

Jamshid Beheshti; B.A.(S. Fraser), M.L.S., Ph.D.(W. Ont.)
France Bouthillier; B.Ed.(Que.), M.B.S.I.(Montr.), Ph.D.(Tor.)
Kimiz Dalkir; B.Sc., M.B.A.(McG.), Ph.D.(C'dia)
Eun Park; B.A.(Pusan), M.L.I.S.(Ill.), M.B.A.(Pitts.), Ph.D.(Calif.-LA)

Assistant Professors

Joan Bartlett; B.Sc., M.L.S., Ph.D.(Tor.)
Catherine Guastavino; B.Sc.(McG.), M.Sc.(Aix-Marseille), Ph.D.(Paris)
Elaine Ménard; B.A., M.A., M.S.I., Ph.D.(Montr.)

Adjunct Professors

Joy Bennett; B.A., M.A.(C'dia), M.L.I.S.(McG.), Ph.D.(C'dia)

Associate Members

Gordon Burr; B.A., M.L.I.S.(McG.), Senior Archivist, Records Management, McGill University Archives
Pierre Pluye; M.D.(Toulouse), M.Sc., Ph.D.(Montr.), Dept. of Family Medicine, McGill University
Richard Virr; B.A.(Tulane), M.A.(Qu.), Ph.D.(McG.), Curator of Manuscripts, Rare Books and Special Collections Division, McGill Libraries

Affiliate Member

Frances Groen; B.A., B.L.S.(Tor.), M.A.(Pitt.)

Professional Associate

Edward Bilodeau; B.Sc., M.L.I.S.(McG.)

Research Associate

Charles Cole; B.A., M.L.I.S.(McG.), Ph.D.(Sheff.)

Lecturers

Clement Arsenault; B.A.(Montr.), M.L.I.S.(McG.), Ph.D.(Tor.)
Tanya Abramovitch; B.A., M.L.I.S., M.A.(McG.)
Leanne Bowler; B.A., M.L.I.S., M.Ed., Ph.D.(McG.)
Louise Carpenter; B.L.S.(Tor.), M.Bibl.(Montr.), M.P.P.PA.(C'dia)

Senior Librarian, Head, Government Documents and Special Collections Services, Webster Library, Concordia University Libraries

April Colosimo; B.Sc.(McG.), M.Sc.(Sher.), M.L.I.S.(McG.)
Danielle Dennie; B.Sc.(Laur.), M.Sc.(Inst. Armand Frappier), M.L.I.S.(McG.), Chemistry & Biochemistry and Physics Librarian, Concordia University Libraries

Jocelyn Godolphin; B.A.(Man.), M.A.(Ore.), M.L.S.(Br. Col.), Asst. Director, Collection Services, Webster Library, Concordia University Libraries

Andrea Harland; B.A.(McG.), M.A.C.(Qu.), M.L.I.S.(McG.), Management & Marketing Subject Librarian, Concordia University Libraries

Michele Jenkins; B.A.(Calif.), M.L.I.S.(McG)
Charles-Antoine Julien; B.Eng., M.Sc.(École Poly., Montr.)
Vivek Venkatesh; B.Sc.(Sing.), M.A., Ph.D.(C'dia)

38.2 Programs Offered

For full information on the School of Information Studies, please see our website at www.mcgill.ca/sis.

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

The M.L.I.S. degree, accredited by the American Library Association, has three areas of specialization: Archival Studies, Knowledge Management and Librarianship. The degree is awarded after successful completion of the equivalent of two academic years of graduate study (48 credits). Four courses in each of the Fall and Winter terms constitutes a full load. Although the program is normally taken full-time, it may be pursued part-time but must be completed within five years of initial registration.

38.2.2 Graduate Certificate in Library and Information Studies

The Graduate Certificate program assists library and information professionals, from this country and elsewhere, in updating their knowledge for advanced responsibility.

The 15-credit program may be completed in one or possibly two academic terms. The program may also be completed on a part-time basis to a maximum of five years.

38.2.3 Graduate Diploma in Library and Information Studies

The Graduate Diploma program provides professional librarians and information specialists with formal, for credit continuing education opportunities to update, specialize, and redirect their careers for advanced responsibility. For those considering admission into the doctoral program, it will provide an opportunity to further develop their research interests.

The 30-credit program may be completed in one calendar year. The program may also be completed on a part-time basis to a maximum of five years.

38.2.4 Ph.D. in Information Studies

The Ph.D. in Information Studies provides an opportunity for exceptional candidates to study interdisciplinary research topics at the doctoral level. The program aims specifically to ensure that its graduates will be able to develop knowledge and critical awareness of relevant theories, principles and methods in Information Studies and to acquire the expertise to conduct and promote scholarly research in the context of Information Studies. The program prepares graduates for research, teaching, and senior administrative positions, in Quebec, Canada and internationally, contributes to the development of knowledge and to
teaching/learning in Information Studies and builds national and international visibility of Information Studies from a research perspective.

### 38.3 Admission Requirements

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

1. Applicants must have a bachelor's degree from a recognized university. Academic standing of at least B, or second class, upper division, or a CGPA of 3.0 out of 4.0 is required. Courses in library and/or information studies taken before or as part of an undergraduate degree, or such courses taken in a school with a program not accredited by the American Library Association, cannot be accepted as credit toward the McGill M.L.I.S.

2. 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 prior to admission. Such proof normally comprises the Test of English as a Foreign Language (TOEFL) with a minimum score of 600 (paper-based test), 250 (computer-based test) with a written score of at least 5.0 for either test, 100 (iBT internet-based TOEFL) with a written score of at least 25 and a reading, speaking and listening score not less than 20, or the International English Language Testing System (IELTS) with a minimum overall band score of 7.5. Applicants whose mother tongue is not English may be asked to demonstrate English-language competency beyond the submission of the TOEFL or IELTS scores.

3. Competency in the use of computers is expected. Applicants should have a thorough knowledge of the Windows operating system, particularly file management and word processing, and presentation software such as PowerPoint.

4. Previous library work experience, while not essential, will be given consideration in assessing an application, but this experience cannot replace academic criteria.

#### 38.3.2 Graduate Certificate in Library and Information Studies

1. Applicants should have a master's degree in Library and Information Studies from a program accredited by the American Library Association (or equivalent). Candidates will normally have at least three years' professional experience following completion of the M.L.I.S.

2. 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 prior to admission. Such proof normally comprises the Test of English as a Foreign Language (TOEFL) with a minimum score of 600 (paper-based test), 250 (computer-based test) with a written score of at least 5.0 for either test, 100 (iBT internet-based TOEFL) with a written score of at least 25 and a reading, speaking and listening score not less than 20, or the International English Language Testing System (IELTS) with a minimum overall band score of 7.5. Applicants whose mother tongue is not English may be asked to demonstrate English-language competency beyond the submission of the TOEFL or IELTS scores.

#### 38.3.3 Graduate Diploma in Library and Information Studies

1. Applicants should have a master's degree in Library and Information Studies from a program accredited by the American Library Association (or equivalent). Admission of students with overseas degrees will be guided by the M.L.I.S. equivalency standards of A.L.A. Applicants will normally have at least three years' professional experience following completion of the M.L.I.S.

2. 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 prior to admission. Such proof normally comprises the Test of English as a Foreign Language (TOEFL) with a minimum score of 600 (paper-based test), 250 (computer-based test) with a written score of at least 5.0 for either test, 100 (iBT internet-based TOEFL) with a written score of at least 25 and a reading, speaking and listening score not less than 20, or the International English Language Testing System (IELTS) with a minimum overall band score of 7.5. Applicants whose mother tongue is not English may be asked to demonstrate English-language competency beyond the submission of the TOEFL or IELTS scores.

#### 38.3.4 Ph.D. in Information Studies

1. Applicants should normally have a master's degree in Library and Information Studies (or equivalent). Master's degrees in other fields will be considered in relation to the proposed research.

   An applicant with a master's degree in Library and Information Studies (or equivalent) will normally be admitted into Ph.D. 2.

   An applicant with a master's degree in another field may be considered for admission as a Ph.D. 2 but will need to register for courses to upgrade background knowledge in library and information studies.

   An applicant who holds only a bachelor’s degree from McGill University or an approved institution in Information Studies (or equivalent) in exceptional circumstances may be admitted to Ph.D. 1.

   A CGPA of at least 3.0 out of 4.0 at both the undergraduate and graduate level is required.

2. 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 prior to admission. Such proof normally comprises the Test of English as a Foreign Language (TOEFL) with a minimum score of 600 (paper-based test), 250 (computer-based test) with a written score of at least 5.0 for either test, 100 (iBT internet-based TOEFL) with a written score of at least 25 and a reading, speaking and listening score not less than 20, or the International English Language Testing System (IELTS) with a minimum overall band score of 7.5. Applicants whose mother tongue is not English may be asked to demonstrate English-language competency beyond the submission of the TOEFL or IELTS scores.
38.4 Application Procedures
Applicants to all programs must submit, or arrange for the submission of, the following documents, directly to the School. Additional requirements for each program are listed below.
1. a completed application form, available on the web at www.mcgill.ca/gradapplicants/apply;
2. official transcripts of the applicant's university record showing degree(s) awarded;
3. two academic letters of recommendation, on letterhead, or if degree was awarded more than five years ago, two employer letters of recommendation;
4. a covering letter outlining the reasons for wishing to undertake the program of study;
5. a curriculum vitae;
6. a non-refundable application fee of $100 in Canadian funds, payable by credit card when applying online.

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

Dates for Guaranteed Consideration
For dates for guaranteed consideration, please consult the following website: www.mcgill.ca/gradapplicants/programs. Then select the appropriate program.

Application forms for entrance into the first year of the M.L.I.S. program should be submitted before the dates for guaranteed consideration is enrolment is limited. Students expecting to be considered for fellowships or scholarships are encouraged to apply before February 1.

Applicants may be interviewed by a member of the Admissions Committee or a delegate.

The Admissions Committee will begin reviewing complete applications on December 1, and offers will be made on a rolling basis from that date.

38.4.2 Graduate Certificate in Library and Information Studies
Applicants must also provide a statement of areas of professional interest.

Dates for guaranteed consideration are the same as for the M.L.I.S. (see section 38.4.1 "Master of Library and Information Studies (M.L.I.S.)").

38.4.3 Graduate Diploma in Library and Information Studies
Applicants must also provide a statement of areas of academic/research interest.

Dates for guaranteed consideration are the same as for the M.L.I.S. (see section 38.4.1 "Master of Library and Information Studies (M.L.I.S.)").

38.4.4 Ph.D. in Information Studies
A short (3-4 page) summary of the proposed research topic, identifying the applicant's main research questions, the research trends that have led to the isolation of the questions, and ways in which the research could be conducted.

Applicants are encouraged to review the Staff Directory and Research sections of the School's website to assist in identifying possible dissertation supervisors and to become familiar with the School's research areas before applying to the Program. Questions can be addressed to the Ph.D. Program Director, Professor Andrew Large.

Dates for Guaranteed Consideration
For dates for guaranteed consideration, please consult the following website: www.mcgill.ca/gradapplicants/programs. Then select the appropriate program.

38.5 Master of Library and Information Studies (M.L.I.S.)
The M.L.I.S. degree is awarded after successful completion of the equivalent of two academic years of graduate study (48 credits). Twelve credits in each of the Fall and Winter terms constitute a full load. Although the program is normally taken full-time, it may be pursued part-time but must be completed within five years of initial registration.

38.5.1 Goals of the M.L.I.S. Program
1. To provide the intellectual foundation for careers in archival studies, knowledge management and librarianship.
2. To foster competencies in managing information and knowledge resources.
3. To advocate the ideal of equal access to information.
4. To promote the appropriate use of technology in meeting information needs.
5. To promote research in the field of library and information studies.
6. To foster commitment to professional service for individuals, organizations and society.

38.5.2 Objectives of the M.L.I.S. Program
Upon completion of the M.L.I.S. degree, graduates will be able to integrate their knowledge and skills to:
1. Understand the historical and theoretical foundations of archival studies, knowledge management and librarianship.
2. Articulate the issues concerning access to information, privacy, censorship, and intellectual freedom.
3. Understand research principles and techniques that are applied in the field.
4. Select, acquire, organize, store, retrieve and disseminate information and knowledge resources.
5. Design, manage and evaluate information systems and services.
6. Apply management theories, principles and techniques in libraries and other knowledge-based organizations.
7. Assume the role of information professionals as mediators between users and information resources.
8. Understand the nature of professional ethics and the role of professional associations.

38.5.3 Objectives of the Archival Studies Stream
M.L.I.S. graduates in the archival studies stream will have:
1. Expertise in archives, records management, and electronic records management to support authenticity, access, and long-term preservation of records.
2. Knowledge of theories and techniques in acquisitions, appraisal, arrangement, description, preservation, and access to records.
3. Skills to practice in settings such as archives, libraries, museums, government agencies, academic institutions, and corporate and non-profit organizations.

Graduates with this stream are prepared for professional careers as archivists, records managers, information managers, records specialists, preservation librarians, and curators.

38.5.4 Objectives of the Knowledge Management Stream
M.L.I.S. graduates in the knowledge management stream will have:
1. Critical knowledge of the creation, capture, organization, sharing, dissemination and evaluation of knowledge assets for individuals, groups, and organizations.
2. Solid grounding in organizational memory, communities of practice, and taxonomies of organizational knowledge.
3. Skills to facilitate user-centred consensus-based approaches.

Graduates with this stream are prepared for professional careers as knowledge managers, online/virtual librarians, knowledge base developers and corporate taxonomists.
38.5.5 Objectives of the Librarianship Stream

M.L.I.S. graduates in the librarianship stream will have:
1. Knowledge to provide library and information services in varied settings to meet the information needs of various clientele.
2. Ability to develop information systems and resources.
3. Skills to practice in libraries and information centres in various settings (including public, academic, school, corporate, and special libraries, as well as government agencies, museums, and health organizations).

Graduates with this stream are prepared for professional careers as reference librarians, cataloguers, instructional technology librarians, information specialists, online information providers, and library and information centre managers.

38.5.6 Categories of Students

Full-time M.L.I.S. students:
Those students who are proceeding to the M.L.I.S. degree and who are registered in at least 12 credits per term.

Part-time M.L.I.S. students:
Those students who are proceeding to the M.L.I.S. degree and who are registered in fewer than 12 credits per term.

Graduate Students in other McGill programs:
Students enrolled in graduate programs at McGill other than the M.L.I.S. may register for M.L.I.S. courses with the approval of the course instructor and the School Director.

Special students:
Individuals who already hold a graduate degree in library and information studies from an accredited program and who are not proceeding to a degree may register for up to 6 credits per term. Enrolment is subject to the condition that regular students have priority in cases of class size restrictions.

38.5.7 Registration – M.L.I.S.

All returning and new graduate students must register online at www.mcgill.ca/minerva, after completing a Minerva Course Selection Form and obtaining departmental approval.

Information concerning registration for incoming M.L.I.S. students will be sent to them prior to July of each year. A non-refundable deposit of $200 is required for the M.L.I.S. program. Applicants must access Minerva by the deadline specified in the letter of offer to confirm acceptance and pay the deposit. Payment is to be made by credit card, or in certain circumstances, by other means through special arrangement with the office of the School of Information Studies. This amount will be credited towards the tuition fee. If payment is not received within the specified deadline, the acceptance will be rescinded. The deposit will be forfeited if the student does not start the M.L.I.S. program.

38.5.8 Introductory Program – M.L.I.S.

All incoming M.L.I.S. students are encouraged to participate in an introductory program designed to acquaint them with the many-faceted world of information and the forward-looking leadership of the library and information professions.

Normally, the program takes place over two days in the Fall in the week prior to classes. It introduces students to the School, to the profession, to information technology and to the historical, social and cultural issues associated with library and information studies. Students have an opportunity to meet with their faculty advisors and with second-year students.

38.5.9 M.L.I.S. Program Requirements

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

The M.L.I.S. offers three streams of study: Archival Studies, Knowledge Management, and Librarianship.

In consultation with the Coordinator of each stream and the Student Affairs Coordinator, before registering for courses students will select a stream based on their interests.

During their first two terms, students should aim to complete the required core and complementary courses needed for their selected stream.

Required Courses (12 credits)

GLIS 601 (3) Information and Society
GLIS 611 (3) Research Principles and Analysis
GLIS 617 (3) Information System Design
GLIS 620 (3) Information Agency Management

Complementary Courses (24-36 credits)

24-36 credits from one of the following streams: Archival Studies, Knowledge Management, or Librarianship.

Archival Studies Stream

12 credits, the following four required courses:
GLIS 641 (3) Archival Arrangement & Description
GLIS 642 (3) Preservation Management
GLIS 645 (3) Archival Principles & Practice
GLIS 660 (3) Records Management

12 - 24 credits chosen from the following complementary courses:
GLIS 609 (3) Metadata & Access
GLIS 613 (3) Library and Archival History
GLIS 634 (3) Web System Design and Management
GLIS 643 (3) Electronic Records Systems
GLIS 646 (12) Research Project
GLIS 647 (6) Independent Study
GLIS 657 (3) Database Design & Development
GLIS 689 (3) Selected Topics
GLIS 699 (3) Practicum

0 - 12 credits chosen from the following complementary courses:
GLIS 616 (3) Information Retrieval
GLIS 619 (3) Information Services & Users
GLIS 631 (3) Systems Thinking
GLIS 632 (3) Library Systems
GLIS 633 (3) Multimedia Systems
GLIS 638 (3) Business Information
GLIS 655 (3) Language and Information
GLIS 661 (3) Knowledge Management
GLIS 665 (3) Competitive Intelligence
GLIS 690 (3) Information Policy

Knowledge Management Stream

12 credits, the following four required courses:
GLIS 661 (3) Knowledge Management
GLIS 662 (3) Intellectual Capital
GLIS 663 (3) Knowledge Taxonomies
GLIS 664 (3) Communities of Practice

12 - 24 credits chosen from the following complementary courses:
GLIS 616 (3) Information Retrieval
GLIS 633 (3) Multimedia Systems
GLIS 634 (3) Web System Design and Management
GLIS 638 (3) Business Information
GLIS 643 (3) Electronic Records Systems
GLIS 646 (12) Research Project
GLIS 647 (6) Independent Study
GLIS 657 (3) Database Design & Development
GLIS 689 (3) Selected Topics
GLIS 699 (3) Practicum

GLIS 620 (3) Preservation Management
GLIS 634 (3) Web System Design and Management
GLIS 643 (3) Electronic Records Systems
0 - 12 credits chosen from the following complementary courses:
- GLIS 607 (3) Organization of Information
- GLIS 619 (3) Information Services & Users
- GLIS 622 (3) Information Service Personnel
- GLIS 623 (3) Financial Management
- GLIS 624 (3) Marketing Information Services
- GLIS 631 (3) Systems Thinking
- GLIS 645 (3) Archival Principles & Practice
- GLIS 655 (3) Language and Information
- GLIS 679 (3) Information Literacy
- GLIS 690 (3) Information Policy

Librarianship Stream
12 credits, the following four required courses:
- GLIS 607 (3) Organization of Information
- GLIS 615 (3) Bibliographic and Factual Sources
- GLIS 618 (3) Collection Development
- GLIS 619 (3) Information Services & Users

12 - 24 credits chosen from the following complementary courses:
- GLIS 608 (3) Classification and Cataloguing
- GLIS 612 (3) History of Books and Printing
- GLIS 613 (3) Library and Archival History
- GLIS 614 (3) Public Libraries
- GLIS 632 (3) Library Systems
- GLIS 636 (3) Government Information
- GLIS 637 (3) Scientific and Technical Information
- GLIS 638 (3) Business Information
- GLIS 644 (3) Descriptive Bibliography
- GLIS 646 (12) Research Project
- GLIS 647 (6) Independent Study
- GLIS 651 (3) Humanities & Social Science Information
- GLIS 656 (3) Abstracting and Indexing
- GLIS 671 (3) Health Sciences Information
- GLIS 672 (3) Law Information
- GLIS 673 (3) Bioinformatics Resources
- GLIS 679 (3) Information Literacy
- GLIS 689 (3) Selected Topics
- GLIS 699 (3) Practicum

0 - 12 credits chosen from the following complementary courses:
- GLIS 609 (3) Metadata & Access
- GLIS 616 (3) Information Retrieval
- GLIS 622 (3) Information Service Personnel
- GLIS 623 (3) Financial Management
- GLIS 624 (3) Marketing Information Services
- GLIS 631 (3) Systems Thinking
- GLIS 633 (3) Multimedia Systems
- GLIS 634 (3) Web System Design and Management
- GLIS 643 (3) Electronic Records Systems
- GLIS 645 (3) Archival Principles & Practice
- GLIS 655 (3) Language and Information
- GLIS 657 (3) Database Design & Development
- GLIS 660 (3) Records Management
- GLIS 661 (3) Knowledge Management
- GLIS 665 (3) Competitive Intelligence
- GLIS 690 (3) Information Policy

Elective Courses (0-12 credits)
0 - 12 elective credits, approved by the student's advisor, selected from the complementary courses of Streams not chosen as the student's primary focus or from other 500-level or higher courses; up to 6 credits may be from other Quebec universities.

38.5.10 Courses outside the School

Courses in other McGill departments
McGill University offers a large number and variety of graduate-level courses. Students interested in taking a course outside the School must complete the following steps:

a) Contact the relevant instructional unit to establish any prerequisites and to ascertain how the unit handles outside registrants;

b) Obtain a current course outline;

c) Demonstrate in writing the value of the selected course within the context of an integrated program of study leading to the M.L.I.S. degree;

d) Gain the approval of their faculty advisor and the School's Director.

Courses in other Quebec universities
Students may take up to six credits at any other Quebec university provided the courses are not available at McGill University. Steps a) to d) outlined above should be followed by any student wishing to pursue this option. For more information, see the General Information section of this Calendar, section 6.1.13 "Quebec Inter-University Transfer Agreement (IUT)".

38.5.11 Transfer Credits
Students may not normally count credit for courses taken toward another degree as credit towards the M.L.I.S. degree. In special cases, however, credit for appropriate courses previously taken outside the School from an ALA-accredited program may be transferred to the M.L.I.S. program. Any such transfer credit must be approved by the Director of the School and the Director of Graduate and Postdoctoral Studies. Requests for transfer credits will only be considered at the time of admission to the M.L.I.S. program.

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

In special cases, students may be excused from taking a required course if they have already completed an equivalent course. In such cases, they must obtain the permission of the instructor and the Director and will be required to substitute an additional complementary course to bring the total of their earned credits in the M.L.I.S. program to the normal 48.

38.5.12 Research Colloquia
Research Colloquia presented by Canadian and international guest speakers are open to students, as well as university staff and the Montreal information community, at various intervals throughout the year. Although not a formal part of the M.L.I.S. program, the Colloquia offer an opportunity for students to learn of current research preoccupations and developments in the field of library and information studies.

38.6 Graduate Certificate in Library and Information Studies
The program may be completed full-time in one academic term, or part-time within a maximum of five years.

Each Certificate student will be assigned a faculty advisor in conjunction with whom an individualized program of study will be designed.

Graduate Certificate in Library and Information Studies
(15 credits)

Complementary Courses (15 credits)
9 - 15 credits, 3 to 5 GLIS courses chosen in consultation with the student's advisor (GLIS 646, GLIS 647, GLIS 689, GLIS 695, GLIS 696 excepted).

N.B.: Students who wish to register for:
GLIS 694 (3) Certificate Project
must first have their research proposal approved by the Committee on Student Standing and Academic Affairs.

0 - 6 credits of non-GLIS courses, with a maximum of 3 credits from outside McGill. All such courses must be at a graduate level and receive the prior approval of the student's advisor(s) and the School's Director.
38.7 Graduate Diploma in Library and Information Studies

The program may be completed in one calendar year. The program may also be completed on a part-time basis to a maximum of five years.

Each Diploma student will be assigned a faculty advisor in conjunction with whom an individualized program of study will be designed.

Graduate Diploma in Library and Information Studies (30 credits)

Complementary Courses (9 - 24 credits)
- 9 - 24 credits. 3 to 8 GLIS courses (GLIS 646, GLIS 647, GLIS 689, GLIS 694 excepted) chosen in consultation with the student’s advisor.
- 0 - 15 credits of non-GLIS courses, a maximum of one-third of which may be from outside McGill. All such courses must be at a graduate level and receive the prior approval of the student’s advisor and the School’s Director.

Research Paper Component - Required (6 - 18 credits)
- 6 - 18 credits, at least one of the following:
  - GLIS 695 (6) Research Paper 1
  - GLIS 696 (12) Research Paper 2

38.8 Ph.D. in Information Studies

The Ph.D. program provides an opportunity to study interdisciplinary research topics within the field of library and information studies at the doctoral level. Students develop scholarly and innovative expertise in one of the four research areas within information studies: a) information-seeking behaviour; b) human-computer interaction; c) information resources in context; d) knowledge management and representation, as well as an awareness of the inter-relatedness of these areas. Students begin with a set of common core courses and proceed to specialization through advanced course work and dissertation topics focused on areas of expertise that are supported by the research interests of current faculty members.

Required Courses (12 credits)
- GLIS 701 * (0) Comprehensive Examination
- GLIS 702 (3) Seminar in Information Studies
- GLIS 703 (3) Research Paradigms in Information Studies
- GLIS 704 (3) Research Design in Information Studies
- GLIS 705 (3) Readings in Information Studies

* Normally taken in the second year.

Students may also be required to take additional courses to prepare them for their research.

Dissertation

38.9 Courses

Students preparing to register should consult Class Schedule on the web at www.mcgill.ca/student-records/register/class-schedule for the most up-to-date list of courses available; courses may have been added, rescheduled or cancelled after this Calendar was published. Class Schedule lists courses by term and includes days, times, locations, and names of instructors.

Students may also consult the School website at www.mcgill.ca/sis/programs and check the timetables for current information.

Not all courses can be offered in any academic year. In addition, courses which have a registration of fewer than five will not normally be taught. Some courses have a maximum enrolment. The course credit weight is given in parentheses after the title.

For more information on Multi-term Courses, Course Terminology, Class Schedule and Course Catalog, see the General Information, Regulations and Research Guidelines, Graduate and Postdoctoral Studies Calendar for 2009-10.

GLIS 601 INFORMATION AND SOCIETY. (3) Introduction to our world of information, documents and information agencies with historical and social approach. A look at how information is generated and at the role played by libraries of all kinds and other relevant agencies. This course should provide a broad framework within which other required or elective courses could be understood.

GLIS 607 ORGANIZATION OF INFORMATION. (3) Theory and techniques of bibliographic control for information. Basic cataloguing and indexing principles and practices incorporating the concepts of main entry, subject analysis, and classification according to standard codes. Introduction to ISBD and MARC formats for description and automated support applications. Practical assignments in the organization of materials laboratory.

GLIS 608 CLASSIFICATION AND CATALOGUING. (3) (Prerequisite: GLIS 607) Cataloguing in depth with a view to such specialties as original cataloguing, catalogue maintenance, and administration of the cataloguing department. Investigation of alternative methods of library documentation. The study of developments in international cataloguing standards, codes, and formats. Includes laboratory sessions.

GLIS 609 METADATA & ACCESS. (3) Archival descriptive tools in metadata-based access systems. Metadata schemas (MARC, Dublin Core and EAD), markup languages (SGML, HTML, and XML), DTD, vocabulary control, and metadata management issues.

GLIS 611 RESEARCH PRINCIPLES AND ANALYSIS. (3) Fundamental aspects of reflective thinking and the methods and techniques of research appropriate to the investigation of library/information problems. Criteria helpful in evaluating published research in library/information studies by analyzing the various steps of the research process, thereby providing guidelines for planning, conducting, and reporting research.

GLIS 612 HISTORY OF BOOKS AND PRINTING. (3) (Prerequisite: GLIS 615 or consent of instructor.) Surveyed are the development of writing, alphabets, and books from their inception, and of printing from its invention in the fifteenth century. Historical bibliography dealing with the various physical elements in book production, including design.

GLIS 613 LIBRARY AND ARCHIVAL HISTORY. (3) (Prerequisite: GLIS 601 or consent of instructor) The historical evolution of libraries & archives, from the ancient world to the present, in relation to literacy, knowledge transfer, technology, and the private and collective ownership of recorded information - manuscript, print, microform, and electronic - within various social, cultural, and chronological contexts.

GLIS 614 PUBLIC LIBRARIES. (3) A review of the Public Library Movement in English and French Canada. The development of public libraries in North America over the last twenty years with an emphasis on the library's role and responsibilities for the future. The impact of information technologies on the definition and delivery of services.

GLIS 615 BIBLIOGRAPHIC AND FACTUAL SOURCES. (3) Introduces students to the theory, principles, and practice of bibliographical control as a foundation for reference service and information retrieval. Paper-based, microform, and electronic bibliographies are introduced. The creation and use of bibliographies, within various contexts, are discussed.

GLIS 616 INFORMATION RETRIEVAL. (3) (Prerequisite: GLIS 617.) Theoretical and applied explanation of information retrieval in a variety of digital environments and in relation to both textual and multimedia data: Information retrieval capabilities, information-seeking models, interface design issues, information visualization and information system evaluation criteria.

GLIS 617 INFORMATION SYSTEM DESIGN. (3) Fundamental concepts of information storage and retrieval. Includes user requirement analysis, information structure analysis, database organizations and characteristics, bibliographic database
construction, search techniques and strategies, OPACs, and hardware and software choices.

GLIS 618 Collection Development. (3) Theoretical and practical introduction to the principles of library and information centre collection building, management, fund accounting, and assessment, with examination of the role of both traditional and newer media in collections.

GLIS 619 Information Services & Users. (3) Information users and use; information needs and use environments. Principles and practices of information transfer; development of information services and collections to meet needs. Evaluation of information services.

GLIS 620 Information Agency Management. (3) Introduction to management theory and decision making in the context of information agencies and services. Emphasis is placed on strategic planning, organizing, quality management, organizational behaviour, human resource management, leadership and communication, management of change, legal issues in information agencies, and information use in decision making.

GLIS 624 Marketing Information Services. (3) The role and use of marketing for information brokers and library or information centres are discussed. Various aspects of the marketing process and applied to information services are analyzed. Students prepare a preliminary marketing plan for an information service of their choice and share similarities and differences in these specific applications.

GLIS 631 Systems Thinking. (3) (Prerequisite: Consent of the instructor) Introduction to general systems thinking and the use of the systems approach as an aid to problem solving and decision making. Subjective and objective factors in modelling for the definition, analysis, design, implementation and evaluation of alternative solutions.

GLIS 632 Library Systems. (3) (Prerequisite: GLIS 617) Focuses on applied systems analysis and project management techniques in an operational environment. Includes an in-depth examination of hardware and software installations, LANs, RFPs, automation, system selection, Internet and Intranet applications, and standards for exchanging digital information.

GLIS 633 Multimedia Systems. (3) (Prerequisites: GLIS 617 and consent of instructor) Theoretical and applied principles of multimedia systems design. Includes knowledge representation; interfaces; storage and retrieval of text, sound, still images, animation and video sequences; authoring software; hardware options; CD-ROM/DVD and web-based systems; virtual reality; testing and evaluation. Students design and develop a small-scale system.

GLIS 634 Web System Design and Management. (3) (Prerequisite: Permission of instructor.) Principles and practices of designing websites in the context of libraries and information centres. The course focuses on a conceptual approach to organizing information for the world wide web including design, implementation and management issues. Topics include web development tools, markup languages, internet security and web server administration.

GLIS 636 Government Information. (3) (Prerequisites: GLIS 615 or GLIS 619, GLIS 617.) An introduction to the structure of governments, and the nature and variety of government information. Emphasis is placed on the governments of Canada, the provinces, the United States and selected international governmental organizations. Topics include the acquisition, organization, bibliographic control and use of government information.

GLIS 637 Scientific & Technical Information. (3) (Prerequisites: GLIS 615 or GLIS 619, GLIS 617.) Examination of the process of communication and information requirements of the scientific community; study of primary, secondary, and tertiary sources of information in the physical, biological, and applied sciences. Study and application of new information technologies, and in particular the world wide web, as used in scientific and technical communication.

GLIS 638 Business Information. (3) (Corequisite: GLIS 617.) A survey of the literature used in business including bibliographic and non-bibliographic data bases. Various aspects of business set the scene for a study of the literature. Students examine key publications, and learn to select a basic business bibliography and to do reference work in the field.

GLIS 641 Archival Arrangement & Description. (3) (Prerequisite: GLIS 645.) Theory and practice of archival description and descriptive tools, including selection and application of appropriate descriptive standards to archival materials and the creation and dissemination of finding aids.

GLIS 642 Preservation Management. (3) (Prerequisite: GLIS 645.) Principles, strategies, and current technologies for intellectual and physical preservation of resources in a variety of formats. Assuring their continued accessibility and extending their life.

GLIS 643 Electronic Records Systems. (3) Implementation and management of electronic recordkeeping systems in different types of organizations. Assessment and evaluation procedures for the system design and analysis, functional analysis, metadata, usability, and content management of electronic recordkeeping systems.

GLIS 644 Descriptive Bibliography. (3) (Prerequisite: GLIS 617) A practical course on the history, description and care of rare books and antiquarian material. The principles of descriptive bibliography will be presented in the context of book culture. The place of rare book collections in research libraries and the practical administration of a rare book department will be examined.

GLIS 645 Archival Principles & Practice. (3) (Advanced work in archival science is available to a few students who do well in the introductory course.) Fundamental principles and practices of archival studies, including acquisition, appraisal, arrangement, description, preservation, public services, societal organizational structures and records keeping systems, and the history of archival institutions and profession.

GLIS 646 Research Project. (12) (Prerequisites: GLIS 611 and permission of Director.) A two-term in-depth research study leading to the preparation of a research paper with potential for publication. The subject of the study will vary according to the student's interests and presupposes some detailed background knowledge in the area to be researched. Working with a faculty supervisor, the student will plan, conduct and document a piece of research.

GLIS 646D1 (6), GLIS 646D2 (6) Research Project. (Prerequisites: GLIS 611 and permission of Director.) (Students must register for both GLIS 646D1 and GLIS 646D2) (No credit will be given for this course unless both GLIS 646D1 and GLIS 646D2 are successfully completed in consecutive terms) (GLIS 646D1 and GLIS 646D2 together are equivalent to GLIS 646) A two-term in-depth research study leading to the preparation of a research paper with potential for publication. The subject of the study will vary according to the student's interests and presupposes some detailed background knowledge in the area to be researched. Working with a faculty supervisor, the student will plan, conduct and document a piece of research.

GLIS 647 Independent Study. (6) (Prerequisites: GLIS 611 and permission of Director.) An in-depth exploration of a topic in library and information studies which is not emphasized or elaborated in any other part of the curriculum. The subject will vary according to the student's interests. It may be a work of synthesis, a research paper of limited scope, a state-of-the-art paper or a project which is an outgrowth of course work or in an area not covered in the curriculum. The student will work with a faculty supervisor to plan and pursue an individualized program of study.

GLIS 647D1 (3), GLIS 647D2 (3) Independent Study. (Prerequisites: GLIS 611 and permission of Director.) (Students must register for both GLIS 647D1 and GLIS 647D2) (No credit will be given for this course unless both GLIS 647D1 and GLIS 647D2 are successfully completed in consecutive terms) (GLIS 647D1 and GLIS 647D2 together are equivalent to GLIS 647) An in-depth exploration of a topic in library and information studies which is not emphasized or elaborated in any other part of the curriculum. The
subject will vary according to the student's interests. It may be a work of synthesis, a research paper of limited scope, a state-of-the-art paper or a project which is an outgrowth of course work or in an area not covered in the curriculum. The student will work with a faculty supervisor to plan and pursue an individualised program of study.

GLIS 651 HUMANITIES AND SOCIAL SCIENCE INFORMATION. (3) (Prerequisites: GLIS 615 or GLIS 619, GLIS 617.) This course investigates the structure of knowledge in the humanities and social sciences and their constituent disciplines in order to understand how information and knowledge in these fields is created, organized, communicated and retrieved.

GLIS 655 LANGUAGE AND INFORMATION. (3) (Prerequisite: GLIS 617.) An explanation of the relationship between language and information science through consideration of: document representations for information retrieval; bilingual/multilingual systems; natural language processing; language barriers to information transfer.

GLIS 656 ABSTRACTING AND INDEXING. (3) (Prerequisite: GLIS 607) Principles and practical methods of abstracting and indexing. Topics include pre- and post-coordinate indexing; concept analysis; vocabulary control; construction and evaluation of thesauri and of indexes for books, periodicals, and series; emphasis on the role of the computer in indexing.

GLIS 657 DATABASE DESIGN & DEVELOPMENT. (3) (Prerequisite: GLIS 617 or permission of the instructor.) Theoretical and applied principles of relational database design. Includes relational theory, conceptual design, database normalization, relational database management systems, SQL queries and database management.

GLIS 660 RECORDS MANAGEMENT. (3) Management of records created by, or maintained by recordkeeping systems. Long-term preservation of records in all formats as part of organizational, research or personal activities.

GLIS 661 KNOWLEDGE MANAGEMENT. (3) (Corequisite: GLIS 601.) An introduction to knowledge management and its links to information systems and information professionals. A broad overview of the creation, capture, codification, sharing and application of knowledge in both tacit and explicit forms. Emphasis is placed on the tools and techniques as well as the role of organizational culture.

GLIS 662 INTELLECTUAL CAPITAL. (3) (Prerequisite: GLIS 661.) Understanding the strategic role of intellectual assets; how individuals, communities and organizations can identify and leverage their knowledge, experience, expertise and innovations more systematically to create value for the organization. Emphasis is placed on understanding the links between individuals and the organization in the sharing of intellectual assets.

GLIS 663 KNOWLEDGE TAXONOMIES. (3) (Prerequisite: GLIS 661.) Basic classification and categorization methods, major taxonomy tools and technologies and practice in knowledge mapping and modelling. Theory and techniques of organization of both tacit and explicit knowledge at three levels: individual, community and the organization. Emphasis will be placed on the social nature of knowledge codification.

GLIS 664 COMMUNITIES OF PRACTICE. (3) (Corequisite: GLIS 661.) Stages in the development of informal knowledge sharing groups and the roles and responsibilities of information professionals are examined. Focus is on the analysis of knowledge flow, knowledge creation and dissemination within and between different networks of knowledge.

GLIS 665 COMPETITIVE INTELLIGENCE. (3) Competitive intelligence process in for-profit and not-for-profit organizations. Principles and tools for identifying competitive intelligence needs; acquiring, organizing and storing information; creating intelligence through analytical techniques; developing and distributing intelligence products. Legal and ethical aspects, information audits, and cooperative intelligence.

GLIS 671 HEALTH SCIENCES INFORMATION. (3) (Prerequisites: GLIS 615 or GLIS 619, GLIS 617.) A survey of information services and sources (both electronic and print) for health care professionals and the general public. An exploration of the information needs of health professionals and scientists; the role of health libraries and librarians; principles of health and biomedical library practice, functions, and management.

GLIS 672 LAW INFORMATION. (3) (Prerequisites: GLIS 615 or GLIS 619, GLIS 617.) The nature and scope of law librarianship and legal information sources; examination of the organization of legal knowledge, the legal research process, law information sources both print and electronic.

GLIS 673 BIOINFORMATICS RESOURCES. (3) (Prerequisites: GLIS 617 and either GLIS 615 or GLIS 619.) Bioinformatics from a library and information science perspective: biological foundation for bioinformatics; bioinformatics information needs and behaviours; information retrieval using key bioinformatics resources; the role of biology, computer science and library and information science; ethics.

GLIS 679 INFORMATION LITERACY. (3) (Prerequisite: GLIS 619.) Definitions of human literacy; information literacy standards; theories and models of information behaviour; design and delivery of information literacy programs; library programs and services; and information literacy research.

GLIS 689 SELECTED TOPICS. (3) (Prerequisite: Permission of Director.) (Corequisite: GLIS 601) To explore a topic in library and information studies which elaborates or augments the curriculum; to pursue an individualized program of directed study which will vary according to the student's interests.

GLIS 690 INFORMATION POLICY. (3) (Prerequisite: GLIS 601) Information societies are examined from a global perspective, emphasising political, economic, social cultural and ethical issues including the roles of government and the private sector in providing information systems and services, transborder data flow, information access at personal, institutional and national level, censorship, copyright and data security.

GLIS 691 SPECIAL TOPICS 1. (3) Seminar to explore topics of particular interest to library and information studies. Topics vary from year to year.

GLIS 692 SPECIAL TOPICS 2. (3) Seminar to explore topics of particular interest to library and information studies. Topics vary from year to year.

GLIS 694 CERTIFICATE PROJECT. (3) This course permits a Graduate Certificate student to pursue an individualized program of directed study, in library and information studies, which will vary with personal interest but will elaborate or augment the curriculum.

GLIS 696D1 (6), GLIS 696D2 (6) RESEARCH PAPER 2. (Students must register for both GLIS 696D1 and GLIS 696D2) (No credit will be given for this course unless both GLIS 696D1 and GLIS 696D2 are successfully completed in consecutive terms) Explores a minor topic relevant to the Graduate Diploma student's program of study and results in a scholarly paper with potential for publication.

GLIS 699 PRACTICUM. (3) (Prerequisites: 18 credits (4 required & 2 stream required complementary courses) and approval of academic advisor and stream coordinator.) Application of theoretical knowledge in an information environment and acquisition of basic professional skills through practice.

GLIS 701 COMPREHENSIVE EXAMINATION. (0) Defence of a comprehensive research proposal.

GLIS 702 SEMINAR IN INFORMATION STUDIES. (3) Examination of students' own specific areas of doctoral research within the broader field of information studies and comparisons of those areas with other traditions of inquiry. Theoretical models and research methodologies as applied in information studies.

GLIS 703 RESEARCH PARADIGMS IN INFORMATION STUDIES. (3) Philosophical foundations of research in information studies, including traditions, approaches, methods, and models of inquiry to provide the capacity to critically assess the value of qualitative and quantitative research methods in relation to specific research problems identified in the discipline.
GLIS 704 Research Design in Information Studies. (3)
Research project design and its application to the specific dissertation proposal through the exploration of ways to operationalize key concepts in information studies and to identify critical steps in data collection and analysis.

GLIS 705 Readings in Information Studies. (3)
Exploration of the literature specifically relevant to the proposed area of research.

39 Integrated Studies in Education

Department of Integrated Studies in Education
Education Building, Room 244
3700 McTavish Street
Montreal QC H3A 1Y2
Website: www.mcgill.ca/edu-integrated

Graduate Programs (Certificate, M.A. and Ph.D.):
Education Building, Room 244
Telephone: 514-398-1591 / 514-398-6985
Fax: 514-398-4529

Chair — Dr. Steven Jordan
Director of M.A. and Ph.D. Programs — Dr. Mela Sarkar
Associate Director of Graduate Certificates in Educational Leadership — Dr. Lynn Butler-Kisber
Associate Director of Graduate Certificates in Educational Leadership — Dr. Sylvia Sklar
Director of Graduate Certificate in Teaching English as a Second Language — Dr. Caroline Riches

The administrative office is open Monday to Friday from 9:00 a.m. to 5:00 p.m. For general information, please contact the Graduate Program Coordinators.

39.1 Staff

Emeritus Professors
Patrick X. Dias; B.A., M.A.(Karachi), B.Ed., Ph.D.(Montr.)
Wayne C. Hall; B.A., M.A.(Bishop's) (William C. Macdonald Emeritus Professor of Education)
Jacques J. Rebuffot; B. ès L., L. ès L., D.E.S.(Aix-Marseilles), Dip. I.E.P., Dr. 3rd Cy.(Stras.)
David C. Smith; B.Ed.(McG.) Ph.D.(Lond.), F.C.C.T., F.R.S.A.

Professors
David Dillon; B.A.(St. Columban's), M.S.(S.W. Texas St.), Ph.D.(Texas-Austin)
Anthony Pare; B.Ed, M.Ed., Ph.D.(McG.)
Ratha Ghosh; C.M., B.A.(Calc.), M.A., Ph.D.(Calc.), F.R.S.C. (William C. Macdonald Professor of Education) (James McGill Professor)
Barry Levy; B.A., M.A., BREA(Yeshiva), Ph.D.(NYU)
Roy Lyster; B.A.(Regina), M.A.(Paris VII), B.Ed., M.Ed., Ph.D.(Tor.)
Claudia A. Mitchell; B.A.(Bran.), M.A.(Mt. St. Vin.), Ph.D.(Alta.) (James McGill Professor)
Bernard Shapiro; B.A.(McG.), M.A.T., Ed.D.(Harv.)

Associate Professors
Helen Amoriggi; B.Sc., M.A.(Rhode Is.), Ed.D.(Boston)
Eric Caplan; B.A.(Tor.), M.A.(Hebrew), Ph.D.(McG.)
Jon G. Bradley; B.A., M.A.(Sir G. Wms.)
Lynn Butler-Kisber; B.Ed., M.Ed.(McG.), Ed.D.(Harv.)

Janet Donin; B.A.(Tor.), M.A.(Ill.), Ph.D.(Cal.) (joint appt. with Educational and Counselling Psychology)
Michael Hoechsmann; B.A., M.A.(S. Fraser), Ph.D.(Tor.)
Steven Jordan; B.A.(Kent), M.Sc.(Lond.), Ph.D.(McG.)
Catherine Le Maistre; B.Sc., Dip.Ed.(Exe.), M.Ed., Ph.D.(McG.)
Kevin McDonough; B.A., B.Ed., M.Ed.(Alta.), Ph.D.(Ill.)
Christopher S. Milligan; B.A.(Sir G. Wms.), M.Ed.(McG.), Ed.D.(Tor.)
Ronald Morris; B.Ed., M.A., Ph.D.(McG.)
Joan Russell; B.Mus., L.Mus., M.Ed., Ph.D.(McG.)
Mela Sarkar; B.A., Dip.Ed.(McG.), M.A., Ph.D.(C'dia)
Gale A. Seiler; B.Sc.(Fairleigh Dickinson), M.S.(Montana), Ph.D.(Penn.)
Shahseen Steinberg; B.G.S., M.A.Educ., Ph.D.(S. Fraser)
Doreen Starke-Meyer-Ring; B.Ed.(Potsdam), M.A.(N. Dakota), Ph.D.(Minn.)
Shirley R. Steinberg; B.Ed., M.Ed.(Leth.), Ph.D.(Penn. St.)
Teresa Strong-Wilson; B.A.(Calg.), B.A.(McG.), M.A., Ph.D.(Vic. (BC))
Carolyn E. Turner; B.A.(Ariz.), M.Ed., Ph.D.(McG.)
Boyd White; B.A.(Sir G. Wms.), B.F.A.(C'dia), M.F.A.(Inst. Allende, Guanajuato), Ph.D.(C'dia)

Assistant Professors
Spencer Boudreau; B.A.(Don Bosco), B.A., M.A.(Sher.), Ph.D.(C'dia)
Abdul Aziz Choudry; Grad.Dip., Ph.D.(C'dia)
Michael Doxtater; B.A.(McM.), M.Sc.Ed., Ph.D.(C'nell)
Bronwen Low; B.A.(Qu.), M.A.(Br. Col.), Ph.D.(York (Can.))
Annie Savard; B.Ed., M.A., Ph.D.(Laval)
Sylvia Sklar; Dip.Ed.(McG.), B.A.(C'dia), M.Ed.(McG.)

Associate Members
Brian Alters, Richard Harris, Lynn McAlpine

Faculty Lecturers
Caroline Riches, Louise Savoie

Adjunct Professors

39.2 Programs Offered

The Department offers the following programs:

Three Graduate Certificates (15 credits)
• Graduate Certificate in Educational Leadership
• Graduate Certificate in Educational Leadership 2
• Graduate Certificate in Teaching English as a Second Language

Four M.A. Thesis and Non-Thesis degree programs (45 credits) in the following areas:
• Culture and Values in Education
• Curriculum Studies
• Educational Leadership
• Second Language Education

The Department also offers a Ph.D. in Educational Studies. The four research areas currently available are:
• Curriculum and Literacy Studies
• Cultural and International Studies in Education
• Studies in Educational Leadership
• Studies in Second Language Education

Applicants should take note that, unlike the Department's Bachelor of Education programs, these graduate programs do not lead to teacher certification.
39.3 Admission Requirements

Graduate Certificates, M.A. and Ph.D. Programs

1. Applicants to the Certificate and M.A. programs must hold a bachelor's degree from a recognized university. A minimum standing equivalent to a CGPA of 3.0/4.0, or 3.2/4.0 for the last two full-time academic years is required. A concentration of courses related to the area chosen for graduate work is usually required. (See #5, below.) Applicants to the Ph.D. program must hold an M.A. in Education or a recognized equivalent degree from a recognized university. The applicant's record should indicate high academic standing (a minimum CGPA of 3.0/4.0) and evidence of research competence in the proposed area of doctoral research.

2. Applicants to the Certificate and M.A. programs must submit:
   - A letter of intent specifying academic and professional experience and interests (specifically, research interests for the thesis option; project interests for the non-thesis project option).
   - Applicants to the Ph.D. in Educational Leadership program must submit:
     - A letter of application identifying the applicant's proposed research topic, potential supervisor and expected professional direction. Please note that it is the Ph.D. applicant's responsibility to secure a supervisor as part of the admission process.
     - A 4-5 page summary of the proposed research topic identifying the applicant's main research questions, the research trends that have led to the isolation of the questions, ways in which the research could be conducted, and relevant references.

3. Two letters of recommendation, at least one of which must be from a university-level instructor; the other may be from an administrator in an educationally relevant context.

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 meet a minimum of two English proficiency criteria:
   - IELTS with a minimum overall band of 7.0
   - TOEFL:
     - iBT (internet-based test) - Total score 92 with a minimum score of 22 each for the Writing and Speaking sections and a minimum of 20 each for the Reading and Listening sections
     - CBT (computer-based test) - 237
     - PBT (paper-based test) - 580
   - The Department reserves the right to evaluate the applicant's language proficiency before initial registration.

5. Further requirements applicable to specific options:

   Graduate Certificate in Educational Leadership 1 and 2.
   Normally, at least two years of relevant educational experience (teaching or related professional experience).

   Graduate Certificate in Teaching English as a Second Language. Applicants are required to pass a written and oral English language proficiency test set by the Department.

   Master of Arts in Second Language Education. Normally, a minimum of 36 credits including a combination of relevant courses in education and language studies.
   Normally, at least two years of relevant professional experience in education.

   Master of Arts in Curriculum Studies and Master of Arts in Educational Leadership. Normally, at least two years of relevant educational experience (teaching or related professional experience).

39.4 Application Procedures

McGill’s online application form is available to all graduate program candidates at www.mcgill.ca/gradapplicants/apply. Applicants must submit, before the dates for guaranteed consideration, the following:

1. completed web application form;
2. $100 application fee;
3. letter of intent (1 to 2 pages) for Certificate and M.A. programs;
4. letter of application and a summary of proposed research topic (4-5 pages) for Ph.D. program;
5. TOEFL score or IELTS result (if applicable). Results must be submitted directly from the TOEFL or IELTS Office;
6. two sets of official transcripts of all previous undergraduate and graduate studies;
7. two letters of recommendation. (At least one of the letters must be from a university-level instructor; the other may be from an administrator qualified to assess the applicant’s professional qualities. Both letters must be on institutional letterhead paper with original signatures; no standard evaluation form is available for this purpose.)

Dates for Guaranteed Consideration

For dates for guaranteed consideration, please consult the following website: www.mcgill.ca/gradapplicants/programs. Then select the appropriate program.

All documentation is to be submitted directly to the Graduate Program Coordinator in the Department of Integrated Studies in Education:

Mary Kate Wallbridge
Graduate Certificate in Teaching English as a Second Language; M.A. in Culture and Values in Education; M.A. in Second Language Education and Ph.D. in Educational Studies
Education Building, Room 244
3700 McTavish Street
Montreal, QC H3A 1Y2

Arwen Fleming
Graduate Certificates in Educational Leadership 1 and 2; M.A. in Educational Leadership and M.A in Curriculum Studies
Department of Integrated Studies in Education
Education Building, Room 244
3700 McTavish Street
Montreal, QC H3A 1Y2

39.5 Program Requirements

39.5.1 Graduate Certificate in Educational Leadership 1

This 15-credit program addresses the needs of experienced and aspiring school leaders who are taking increased responsibility for the students and communities they serve. The management of schools is increasingly seen as making a major contribution to the learning and personal development of students. The professional development of school leaders, educational reform and school partnership form the basis for the program.

Required Courses (9 credits)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDEM 610</td>
<td>Leadership in Action</td>
<td>3</td>
</tr>
<tr>
<td>EDEM 628</td>
<td>Education Resource Management</td>
<td>3</td>
</tr>
<tr>
<td>EDEM 646</td>
<td>Planning and Evaluation</td>
<td>3</td>
</tr>
</tbody>
</table>
39.5.2 Graduate Certificate in Educational Leadership 2

This 15-credit program explores deeper leadership theory and educational issues and applications in a practicum. Candidates for the Graduate Certificate in Educational Leadership 2 should normally have completed the first certificate. In combination, the two certificates allow school administrators to acquire the 30 graduate credits in the field of educational leadership required by the Quebec Ministry of Education.

Required Courses (9 credits)
EDEM 609 (3) Introduction to Educational Theory and Research
EDEM 673 (3) Leadership Theory in Education
EDEM 681 (3) Practicum-Administrative Studies

Complementary Courses (6 credits)
Two courses chosen from the following:
EDEC 635 (3) Advanced Written Communication
EDEM 635 (3) Fiscal Accountability in Education
EDEM 637 (3) Managing Educational Change
EDEM 644 (3) Curriculum Development and Implementation
EDEM 660 (3) Community Relations in Education
EDEM 664 (3) Education and the Law
EDEM 671 (3) The Principalship
EDEM 675 (3) Special Topics 1
EDEM 693 (3) School Improvement Approaches
EDEM 695 (3) Policy Studies in Education

39.5.3 Graduate Certificate in Teaching English as a Second Language (15 credits)

This 15-credit certificate is designed as professional development for in-service teachers and candidates with a background in education, language studies, linguistics or a related field, or as preparation for application to our M.A. in Second Language Education. The 5 courses which comprise the certificate provide a solid background and offer in-depth study in the field of second language education from a range of perspectives and with a focus on research and applications to teaching. Please note that this certificate does not lead to teacher certification.

The Graduate Certificate in TESL is designed to be available to students worldwide. Courses are offered in a combination of online and face-to-face formats, and sequenced in such a way that students can complete the certificate in one year. The maximum time for completion is five years. The first 3 courses are offered online, and can be undertaken anywhere an internet connection is available. The final two courses are offered face-to-face either on-site at McGill or at off-site locations with collaborative partners, if numbers warrant.

Required Courses (15 credits)
Online courses:
EDSL 500 (3) Foundations and Issues in Second Language Education
EDSL 505 (3) Second Language Acquisition Applied to Classroom Contexts
EDSL 512 (3) Grammar in Teaching English as a Second Language

On-site at McGill* in Intensive (1 month) Institute
EDSL 601 (3) Methods and Curriculum in Teaching ESL
EDSL 602 (3) Second Language Reading and Writing Development

* off-site delivery can be considered for a specified minimum number of students. Certain limitations and additional costs would apply.

39.5.4 M.A. in Culture and Values in Education

This program is designed to support inquiries into the meaning and purpose of education, to help candidates gain facility in appropriate research skills, and to develop innovative approaches to educational thought and practice. The program encourages research into educational issues that have a culture and/or values orientation as a key investigative focus on more specific topics - such as philosophy of education, international and comparative education, intercultural education, values/moral education, gender education, religious/spirituality education, peace education, or art and aesthetics education.

M A S T E R O F A R T S I N C U L T U R E A N D V A L U E S I N E D U C A T I O N (T h e s i s O p t i o n) (45 credits)

Required Courses (30 credits)
EDEM 609 (3) Introduction to Educational Theory and Research
EDER 615 (3) Culture, Values and Education
EDER 690 (6) Thesis Preparation 1
EDER 691 (6) Thesis Preparation 2
EDER 692 (12) Thesis Preparation 3

Complementary Courses (9 credits)
6 credits to be selected from the following courses:
EDEC 620 (3) Meanings of Literacy
EDER 600 (3) Globalization, Education & Change
EDER 606 (3) Philosophy of Moral Education
EDER 607 (3) Values Education: Contemporary Approaches
EDER 608 (3) Educational Implications of Social Theory
EDER 614 (3) Sociology of Education
EDER 617 (3) Aesthetics and Education
EDER 625 (3) Topics: Culture in Education
EDER 628 (3) Topics: Value in Education
EDER 649 (3) Education: Multicultural Societies

3 credits to be selected from the following courses:
EDEM 690 (3) Research Methods: Philosophy and Practice
EDEM 692 (3) Qualitative Research Methods
EDSL 630 (3) Qualitative/Ethnographic Methods

E l e c t i v e C o u r s e s (6 credits)
6 credits at the 500, 600, or 700 level chosen in consultation with the Graduate Program Director.


The Graduate Option in Gender and Women’s Studies is an interdisciplinary program for students who meet Culture and Values in Education degree requirements in Integrated Studies in Education (and other participating departments and faculties) who wish to earn 6 credits of approved coursework focusing on gender and women’s studies, and issues in feminist research and methods. The student’s M.A. thesis must be on a topic centrally related to issues of gender and/or women’s studies.
Required Courses (33 credits)
EDEM 609 (3) Introduction to Educational Theory and Research
EDER 615 (3) Culture, Values and Education
EDER 690 (6) Thesis Preparation 1
EDER 691 (6) Thesis Preparation 2
EDER 692 (12) Thesis Preparation 3
WMST 601 (3) Feminist Theories and Methods

Complementary Courses (9 credits)
3 credits to be selected from the following courses:
EDEC 620 (3) Meanings of Literacy
EDER 600 (3) Globalization, Education & Change
EDER 606 (3) Philosophy of Moral Education
EDER 607 (3) Values Education: Contemporary Approaches
EDER 608 (3) Educational Implications of Social Theory
EDER 614 (3) Sociology of Education
EDER 617 (3) Aesthetics and Education
EDER 625 (3) Topics: Culture in Education
EDER 626 (3) Topics: Value in Education
EDER 649 (3) Education: Multicultural Societies

3 credits to be selected from the following courses:
EDEM 690 (3) Research Methods: Philosophy and Practice
EDSL 630 (3) Qualitative/Ethnographic Methods
EDEM 692 (3) Qualitative Research Methods
EDER 615 (3) Culture, Values and Education
EDEM 609 (3) Introduction to Educational Theory and Research

Elective Course (3 credits)
3 credits at the 500 level or higher chosen in consultation with the Graduate Program Director.

MASTER OF ARTS IN CULTURE AND VALUES IN EDUCATION (Non-Thesis Option – Coursework) (45 credits)

Required Courses (6 credits)
EDEM 609 (3) Introduction to Educational Theory and Research
EDER 615 (3) Culture, Values and Education

Complementary Courses (24 credits)
21 credits to be selected from the following courses:
EDEC 620 (3) Meanings of Literacy
EDER 600 (3) Globalization, Education & Change
EDER 606 (3) Philosophy of Moral Education
EDER 607 (3) Values Education: Contemporary Approaches
EDER 608 (3) Educational Implications of Social Theory
EDER 614 (3) Sociology of Education
EDER 617 (3) Aesthetics and Education
EDER 625 (3) Topics: Culture in Education
EDER 626 (3) Topics: Value in Education
EDER 649 (3) Education: Multicultural Societies

3 credits to be selected from the following courses:
EDEM 690 (3) Research Methods: Philosophy and Practice
EDEM 692 (3) Qualitative Research Methods
EDSL 630 (3) Qualitative/Ethnographic Methods

Elective Courses (15 credits)
15 additional credits at the 500, 600, or 700 level chosen in consultation with the Graduate Program Director.

MASTER OF ARTS IN CULTURE AND VALUES IN EDUCATION (Non-Thesis Option – Project ) (45 credits)
The Graduate Non-Thesis Project Option in Gender and Women’s Studies is an interdisciplinary program for students who meet Cultural and Values in Education degree requirements in Integrated Studies in Education (and other participating departments and faculties) who wish to earn 6 credits of approved coursework focusing on gender and women’s studies, and issues in feminist research and methods. The student’s M.A. project must be on a topic centrally related to issues of gender and/or women’s studies.

Required Courses (21 credits)
EDEM 609 (3) Introduction to Educational Theory and Research
EDER 615 (3) Culture, Values and Education
EDER 633 (6) Project 1
EDER 634 (6) Project 2
WMST 601 (3) Feminist Theories and Methods

Complementary Courses (12 credits)
9 credits to be selected from the following courses:
EDEC 620 (3) Meanings of Literacy
EDER 600 (3) Globalization, Education & Change
EDER 606 (3) Philosophy of Moral Education
EDER 607 (3) Values Education: Contemporary Approaches
EDER 608 (3) Educational Implications of Social Theory
EDER 614 (3) Sociology of Education
EDER 617 (3) Aesthetics and Education
EDER 625 (3) Topics: Culture in Education
EDER 626 (3) Topics: Value in Education
EDER 649 (3) Education: Multicultural Societies

3 credits to be selected from the following courses:
EDEM 690 (3) Research Methods: Philosophy and Practice
EDEM 692 (3) Qualitative Research Methods
EDSL 630 (3) Qualitative/Ethnographic Methods

Elective Courses (12 credits)
12 additional credits at the 500 level or higher chosen in consultation with the Graduate Program Director.
MASTER OF ARTS IN CULTURE AND VALUES IN EDUCATION – JEWISH EDUCATION (Non-Thesis Option) (45 credits)

This program is designed to offer a graduate-level point of entry into the teaching profession for students who typically will have completed a B.A. with minor or major in Jewish studies. The M.A. will not provide Quebec Government teacher certification (in Quebec, certification is at the B.Ed. level) but Jewish schools may hire non-certified teachers of Jewish studies at their discretion.

Students interested in doing a research-focused M.A. in the area of Jewish education should follow one of the other graduate degree offerings within the area of Culture and Values in Education.

Required Courses (21 credits)
EDEM 690 (3) Research Methods: Philosophy and Practice
EDER 520 (3) Issues in Jewish Education
EDER 529 (0) Hebrew Language Requirement
EDER 610D1 (7.5) Internship
EDER 610D2 (7.5) Internship

Complementary Courses (24 credits)
24 credits at the 500 level or above, selected in consultation with the program advisor. Students will normally follow this profile:
9 credits from the course offerings of the Department of Jewish Studies, Faculty of Arts.
9 credits from among the following:
EDER 521 (3) Teaching Judaism: Yiddish
EDER 522 (3) Teaching Judaism: Hebrew
EDER 523 (3) Teaching Judaism: Bible
EDER 524 (3) Teaching Judaism: History
EDER 525 (3) Teaching Judaism: Holidays
EDER 526 (3) Teaching Judaism: Liturgy
EDER 527 (3) Teaching Judaism: Special Topics
EDER 528 (3) Teaching Judaism: The Holocaust
6 credits from among the following:
EDPI 526 (3) Talented and Gifted Studies
EDPI 642 (3) Education of Learners/Special Needs 1
EDPI 654 (3) Instruction/Curriculum Adaptation
EDPI 666 (3) Methods: Learning Disabilities
EDPE 510 (3) Learning and Technology
EDPE 535 (3) Instructional Design
EDPE 616 (3) Cognitive Development

39.5.5 M.A. in Curriculum Studies

This program introduces students to the broad field of curriculum studies in education. Students explore past and present theoretical perspectives on the curriculum, as well as issues concerned with curriculum design, implementation, planning and development. A central theme of the program is how curriculum unites theory and practice in education. The program draws upon a wide range of expertise from within the Department, including: sociology of education, multicultural and intercultural education, science and technology education, policy studies, gender, critical pedagogy, media and cultural studies.

MASTER OF ARTS IN CURRICULUM STUDIES – GENDER AND WOMEN’S STUDIES (Thesis Option) (45 credits)

The Graduate Program in Gender and Women’s Studies is an interdisciplinary program for students who meet Curriculum Studies degree requirements in Integrated Studies in Education (and other participating departments and faculties) who wish to earn 6 credits of approved coursework focusing on gender and women’s studies, and issues in feminist research and methods. The student’s M.A. thesis must be on a topic centrally relating to issues of gender and/or women’s studies.

Required Courses (36 credits)
EDEC 602 (3) Foundations of Curriculum
EDEC 606 (3) Seminar in Curriculum Inquiry
EDEM 609 (3) Introduction to Educational Theory and Research

Elective Courses (6 credits)
6 credits at the 500, 600, or 700 level chosen in consultation with the Graduate Program Director.

MASTER OF ARTS IN CURRICULUM STUDIES – GENDER AND WOMEN’S STUDIES (Non-Thesis Option – Coursework) (45 credits)

Required Courses (12 credits)
EDEC 602 (3) Foundations of Curriculum
EDEC 606 (3) Seminar in Curriculum Inquiry
EDEM 609 (3) Introduction to Educational Theory and Research
EDEM 690 (3) Research Methods: Philosophy and Practice

Elective Courses (27 credits)
24 credits from the following:
EDEC 500 (3) Tutoring Writing
EDEC 604 (3) Literacy and Learning Across Curriculum
EDEC 610 (3) Literature: Children/Young Adults
EDIC 612 (3) Media Literacy
EDEC 616 (3) Reading Course
EDEC 620 (3) Meanings of Literacy
EDEC 627 (3) Responding to Texts
EDEC 635 (3) Advanced Written Communication
EDEM 644 (3) Curriculum Development and Implementation

3 credits from the following:
EDEM 610 (3) Leadership in Action
EDEM 646 (3) Planning and Evaluation
EDEM 664 (3) Education and the Law
EDEM 673 (3) Leadership Theory in Education
EDEM 675 (3) Organizational Theory and Education

Elective Courses (6 credits)
6 credits at the 500, 600, or 700 level chosen in consultation with the Graduate Program Director.
MASTER OF ARTS IN CURRICULUM STUDIES (Non-Thesis Option – Project) (45 credits)

Required Courses (24 credits)
EDEC 602 (3) Foundations of Curriculum
EDEC 606 (3) Seminar in Curriculum Inquiry
EDEM 608 (3) Introduction to Educational Theory and Research
EDEM 690 (3) Research Methods: Philosophy and Practice
EDEM 625 (6) Project 1
EDEM 627 (6) Project 2

Complementary Courses (15 credits)
12 credits from the following:
EDEC 500 (3) Tutoring Writing
EDEC 612 (3) Media Literacy
EDEC 620 (3) Meanings of Literacy
EDEC 627 (3) Responding to Texts
EDEC 635 (3) Advanced Written Communication
EDEM 644 (3) Curriculum Development and Implementation

3 credits from the following:
EDEM 610 (3) Leadership in Action
EDEM 646 (3) Planning and Evaluation
EDEM 664 (3) Education and the Law
EDEM 673 (3) Leadership Theory in Education
EDEM 675 (3) Special Topics 1

Elective Courses (6 credits)
6 credits at the 500, 600, or 700 level chosen in consultation with the Graduate Program Director.

MASTER OF ARTS IN CURRICULUM STUDIES – GENDER AND WOMEN’S STUDIES (Non-Thesis Option – Project) (45 credits)

The Graduate Non-Thesis Project Option in Gender and Women’s Studies is an interdisciplinary program for students who meet Curriculum Studies degree requirements in Integrated Studies in Education (and other participating departments and faculties) who wish to earn 6 credits of approved coursework focusing on gender and women’s studies, and issues in feminist research and methods. The student’s M.A. project must be on a topic centrally relating to issues of gender and/or women’s studies.

Required Courses (27 credits)
EDEC 602 (3) Foundations of Curriculum
EDEC 606 (3) Seminar in Curriculum Inquiry
EDEM 609 (3) Introduction to Educational Theory and Research
EDEM 690 (3) Research Methods: Philosophy and Practice
EDEM 625 (6) Project 1
EDEM 627 (6) Project 2
WMST 601 (3) Feminist Theories and Methods

Complementary Courses (15 credits)
9 credits from the following:
EDEC 500 (3) Tutoring Writing
EDEC 612 (3) Media Literacy
EDEC 620 (3) Meanings of Literacy
EDEC 627 (3) Responding to Texts
EDEC 635 (3) Advanced Written Communication
EDEM 644 (3) Curriculum Development and Implementation

3 credits from the following:
EDEM 610 (3) Leadership in Action
EDEM 646 (3) Planning and Evaluation
EDEM 664 (3) Education and the Law
EDEM 673 (3) Leadership Theory in Education
EDEM 675 (3) Special Topics 1

3 credits chosen from the following, must be either:
WMST 602 (3) Feminist Research Symposium
or one 3-credit course, at the 500 level or higher, on gender/women’s issues (may be in the department or outside).

Elective Course (3 credits)
3 credits at the 500 level or higher chosen in consultation with the Graduate Program Director.

39.56 M.A. in Educational Leadership
This program is designed to prepare leaders in the field of education who are committed to personal and institutional improvement in schools and other centres of formal or informal learning. The program fosters the ongoing development of reflective practitioners who have a sense of educational action, the capacity to anticipate needs, the ability to exercise professional judgment within the realities of policy frameworks, and the ability to both lead and support institutional and organizational change at all levels. A central theme of the program is the impact of policy on educational practice at local, national and international levels.

MASTER OF ARTS IN EDUCATIONAL LEADERSHIP (Thesis Option) (45 credits)

Required Courses (33 credits)
EDEM 609 (3) Introduction to Educational Theory and Research
EDEM 610 (3) Leadership in Action
EDEM 673 (3) Leadership Theory in Education
EDEM 621 (6) Thesis 1
EDEM 623 (6) Thesis 2
EDEM 699 (12) Thesis 3

Complementary Courses (6 credits)
6 credits from the following:
EDEM 690 (3) Research Methods: Philosophy and Practice
EDEM 692 (3) Qualitative Research Methods, or equivalent
EDSL 630 (3) Qualitative/Ethnographic Methods

Elective Courses (6 credits)
6 credits at the 500, 600, or 700 level chosen in consultation with the Graduate Program Director.

MASTER OF ARTS IN EDUCATIONAL LEADERSHIP – GENDER AND WOMEN’S STUDIES (Thesis Option) (45 credits)

The Graduate Option in Gender and Women’s Studies is an interdisciplinary program for students who meet Educational Leadership degree requirements in Integrated Studies in Education (and other participating departments and faculties) who wish to earn 6 credits of approved coursework focusing on gender and women’s studies, and issues in feminist research and methods. The student’s M.A. thesis must be on a topic centrally relating to issues of gender and/or women’s studies.

Required Courses (36 credits)
EDEM 609 (3) Introduction to Educational Theory and Research
EDEM 610 (3) Leadership in Action
EDEM 673 (3) Leadership Theory in Education
EDEM 621 (6) Thesis 1
EDEM 623 (6) Thesis 2
EDEM 699 (12) Thesis 3
WMST 601 (3) Feminist Theories and Methods

Complementary Courses (6 credits)
3 credits from following:
EDEM 690 (3) Research Methods: Philosophy and Practice
EDEM 692 (3) Qualitative Research Methods, or equivalent
EDSL 630 (3) Qualitative/Ethnographic Methods

3 credits chosen from the following, must be either:
WMST 602 (3) Feminist Research Symposium
or one 3-credit course, at the 500 level or higher, on gender/women’s issues (may be in the department or outside).
Elective Courses (3 credits)
3 credits at the 500 level or higher chosen in consultation with the Graduate Program Director.

MASTER OF ARTS IN EDUCATIONAL LEADERSHIP
(Non-Thesis Option – Coursework) (45 credits)

Required Courses (12 credits)
EDEM 609 (3) Introduction to Educational Theory and Research
EDEM 610 (3) Leadership in Action
EDEM 673 (3) Leadership Theory in Education
EDEM 690 (3) Research Methods: Philosophy and Practice

Complementary Courses (27 credits)
24 credits from the following:
EDEM 628 (3) Education Resource Management
EDEM 630 (3) Policy Issues: Workplace Learning
EDEM 637 (3) Managing Educational Change
EDEM 644 (3) Curriculum Development and Implementation
EDEM 646 (3) Planning and Evaluation
EDEM 664 (3) Education and the Law
EDEM 674 (3) Organizational Theory and Education
EDEM 675 (3) Special Topics 1
EDEM 677 (3) Special Topics 2
EDEM 693 (3) School Improvement Approaches

3 credits from the following:
EDEC 602 (3) Foundations of Curriculum
EDEC 606 (3) Seminar in Curriculum Inquiry
EDEC 612 (3) Media Literacy
EDEC 620 (3) Meanings of Literacy
EDEC 635 (3) Advanced Written Communication

Elective Courses (6 credits)
6 credits at the 500, 600, or 700 level chosen in consultation with the Graduate Program Director.

MASTER OF ARTS IN EDUCATIONAL LEADERSHIP
(Non-Thesis Option – Project) (45 credits)

Required Courses (24 credits)
EDEM 609 (3) Introduction to Educational Theory and Research
EDEM 610 (3) Leadership in Action
EDEM 673 (3) Leadership Theory in Education

Complementary Courses (15 credits)
12 credits from the following:
EDEM 628 (3) Education Resource Management
EDEM 630 (3) Policy Issues: Workplace Learning
EDEM 637 (3) Managing Educational Change
EDEM 644 (3) Curriculum Development and Implementation
EDEM 646 (3) Planning and Evaluation
EDEM 664 (3) Education and the Law
EDEM 674 (3) Organizational Theory and Education
EDEM 675 (3) Special Topics 1
EDEM 677 (3) Special Topics 2
EDEM 693 (3) School Improvement Approaches

3 credits from the following:
EDEC 602 (3) Foundations of Curriculum
EDEC 606 (3) Seminar in Curriculum Inquiry
EDEC 612 (3) Media Literacy
EDEC 620 (3) Meanings of Literacy
EDEC 635 (3) Advanced Written Communication

Elective Course (3 credits)
6 credits at the 500, 600, or 700 level chosen in consultation with the Graduate Program Director.

MASTER OF ARTS IN EDUCATIONAL LEADERSHIP –
GENDER AND WOMEN’S STUDIES (Non-Thesis Option –
Project) (45 credits)

The Graduate Non-Thesis Project Option in Gender and Women’s Studies is an interdisciplinary program for students who meet Educational Leadership degree requirements in Integrated Studies in Education (and other participating departments and faculties) who wish to earn 6 credits of approved coursework focusing on gender and women’s studies, and issues in feminist research and methods. The student’s M.A. project must be on a topic centrally relating to issues of gender and/or women’s studies.

Required Courses (27 credits)
EDEM 609 (3) Introduction to Educational Theory and Research
EDEM 610 (3) Leadership in Action
EDEM 673 (3) Leadership Theory in Education
EDEM 690 (3) Research Methods: Philosophy and Practice
EDEM 625 (6) Project 1
EDEM 627 (6) Project 2
WMST 601 (3) Feminist Theories and Methods

Complementary Courses (15 credits)
9 credits from the following:
EDEM 628 (3) Education Resource Management
EDEM 630 (3) Policy Issues: Workplace Learning
EDEM 637 (3) Managing Educational Change
EDEM 644 (3) Curriculum Development and Implementation
EDEM 646 (3) Planning and Evaluation
EDEM 664 (3) Education and the Law
EDEM 674 (3) Organizational Theory and Education
EDEM 675 (3) Special Topics 1
EDEM 677 (3) Special Topics 2
EDEM 693 (3) School Improvement Approaches

3 credits from the following:
EDEC 602 (3) Foundations of Curriculum
EDEC 606 (3) Seminar in Curriculum Inquiry
EDEC 612 (3) Media Literacy
EDEC 620 (3) Meanings of Literacy
EDEC 635 (3) Advanced Written Communication

Elective Course (3 credits)
6 credits at the 500 level or higher chosen in consultation with the Graduate Program Director.

39.5.7 M.A. in Second Language Education

From a range of pedagogical, linguistic, cognitive, political, and sociocultural perspectives, this program combines theoretical and applied studies of how second and foreign languages are learned and used. The M.A. Thesis option is a research-oriented degree in which approximately half consists of thesis research. The M.A. Non-Thesis option, consisting entirely of course work, is less research-oriented and suitable for practitioners interested in professional development with a theoretical orientation.

MASTER OF ARTS IN SECOND LANGUAGE EDUCATION
(Thesis Option) (45 credits)

Required Courses (33 credits)
EDPE 575 (3) Educational Measurement
EDSL 623 (3) Second Language Learning
EDSL 664 (3) Second Language Research Methods
EDSL 666 (6) Thesis Research 1
EDSL 667 (6) Thesis Research 2
EDSL 668 (6) Thesis Research 3
EDSL 669 (6) Thesis Research 4
**Complementary Courses (9 credits)**

9 credits chosen from the following:
- EDEM 609 (3) Introduction to Educational Theory and Research
- EDSL 617 (3) Special Topic in Second Language Education
- EDSL 620 (3) Critical Issues in Second Language Education
- EDSL 624 (3) Educational Sociolinguistics
- EDSL 627 (3) Classroom-Centred Second Language Research
- EDSL 629 (3) Second Language Assessment
- EDSL 630 (3) Qualitative/Ethnographic Methods
- EDSL 631 (3) Second Language Curriculum
- EDSL 632 (3) Second Language Literacy Development
- EDSL 651 (3) Content-Based L2 Learning

**Elective Course (3 credits)**

3 credits at the 500, 600 or 700 level chosen in consultation with the Graduate Program Director.

**MASTER OF ARTS IN SECOND LANGUAGE EDUCATION – GENDER AND WOMEN’S STUDIES (Thesis Option)**

(45 credits)

The Graduate Option in Gender and Women’s Studies is an interdisciplinary program for students who meet Second Language Education degree requirements in Integrated Studies in Education (and other participating departments and faculties) who wish to earn 6 credits of approved coursework focusing on gender and women’s studies, and issues in feminist research and methods. The student’s M.A. thesis must be on a topic centrally relating to issues of gender and/or women’s studies.

**Required Courses (36 credits)**

- EDEP 575 (3) Educational Measurement
- EDSL 623 (3) Second Language Learning
- EDSL 664 (3) Second Language Research Methods
- EDSL 666 (6) Thesis Research 1
- EDSL 667 (6) Thesis Research 2
- EDSL 668 (6) Thesis Research 3
- EDSL 669 (6) Thesis Research 4
- WMST 601 (3) Feminist Theories and Methods

**Complementary Courses (9 credits)**

6 credits chosen from the following:
- EDEM 609 (3) Introduction to Educational Theory and Research
- EDSL 617 (3) Special Topic in Second Language Education
- EDSL 620 (3) Critical Issues in Second Language Education
- EDSL 624 (3) Educational Sociolinguistics
- EDSL 627 (3) Classroom-Centred Second Language Research
- EDSL 629 (3) Second Language Assessment
- EDSL 630 (3) Qualitative/Ethnographic Methods
- EDSL 631 (3) Second Language Curriculum
- EDSL 632 (3) Second Language Literacy Development
- EDSL 651 (3) Content-Based L2 Learning

3 credits chosen from the following, must be either:
- or one 3-credit course, at the 500 level or higher, on gender/women’s issues (may be in the department or outside).

**MASTER OF ARTS IN SECOND LANGUAGE EDUCATION (Non-Thesis Option) (45 credits)**

**Required Courses (12 credits)**

- EDEM 609 (3) Introduction to Educational Theory and Research
- EDEP 575 (3) Educational Measurement
- EDSL 623 (3) Second Language Learning
- EDSL 664 (3) Second Language Research Methods

**Complementary Courses (15 credits)**

15 credits chosen from the following:
- EDSL 617 (3) Special Topic in Second Language Education
- EDSL 620 (3) Critical Issues in Second Language Education
- EDSL 624 (3) Educational Sociolinguistics
- EDSL 627 (3) Classroom-Centred Second Language Research
- EDSL 629 (3) Second Language Assessment
- EDSL 630 (3) Qualitative/Ethnographic Methods
- EDSL 631 (3) Second Language Curriculum
- EDSL 632 (3) Second Language Literacy Development
- EDSL 651 (3) Content-Based L2 Learning

**Elective Courses (18 credits)**

Elective courses, at the 500 or 600 level, are selected in consultation with the Graduate Program Director and may include complementary courses listed above. Up to 6 of the elective credits may include the following:
- EDEC 635 (3) Advanced Written Communication (for students whose primary language is English)
- ESLN 590 (3) Writing for Graduate Students (for students whose primary language is not English)

An undergraduate language course (e.g., Spanish, Italian, Japanese).

**39.5.8 Ph.D. in Educational Studies**

The Ph.D. in Educational Studies provides an integrative perspective on education by drawing on a range of related disciplines and research orientations. Students develop scholarly and innovative expertise in at least one of three contexts of inquiry and awareness of the inter-relatedness of all three: (a) the broad context of culture and society; (b) the international, national, and local contexts of educational leadership and policy studies; and (c) the more specific contexts of schools and other sites of teaching and learning. Students begin with a set of common core courses and proceed to specialization through advanced course work and dissertation topics focused on areas of expertise that are supported by the research interests of current faculty members.

**Required Courses (8 credits)**

- EDEC 700 (2) Proseminar in Education 1
- EDEC 702 (2) Proseminar in Education 2
- EDEC 703 (2) Ph.D. Colloquium 1
- EDEC 704 (2) Ph.D. Colloquium 2
- EDEC 701 (0) Ph.D. Comprehensive Examination

(Normally taken at the end of the second year for Ph.D. 2 program entrants and at the end of the third year for Ph.D. 1 entrants.)

**Complementary Courses (3 credits)**

One of:
- EDEC 705 (3) Advanced Research Designs
- EDEC 706 (3) Textual Approaches to Research
- EDEC 707 (3) Interpretive Inquiry

**Elective Courses (0-12 credits)**

Elective courses required in the student's Ph.D. plan of study will be determined in consultation with the Doctoral Advisory Committee depending on the student's background and research interests. Students admitted to Ph.D. 2 will normally take up to 12 credits of electives under the advice of their Doctoral Advisory Committee. Students admitted to Ph.D. 1, without an M.A., may be advised by their Doctoral Advisory Committee to take more than 12 credits of electives depending on their background. If admitted to the program without at least six credits of M.A.-level research methods and/or statistics courses, candidates may be expected to take such courses during their first year of study as advised. These may be selected from current offerings of research methods courses either within or outside the Department, such as:
EDEM 690 (3) Research Methods: Philosophy and Practice
EDEM 692 (3) Qualitative Research Methods
EDSL 630 (3) Qualitative/Ethnographic Methods
EDSL 664 (3) Second Language Research Methods

Students required by their Doctoral Advisory Committee to take
graduate courses in statistics will select from a range of
courses, such as the following:
EDPE 575 (3) Educational Measurement
EDPE 676 (3) Intermediate Statistics 2
EDPE 682 (3) Univariate/Multivariate Analysis

Dissertation

Ph.D. in Educational Studies –
Language Acquisition Option

Students must satisfy all program requirements for the Ph.D. in
Educational Studies. The Ph.D. thesis must be on a topic relating
to language acquisition, approved by the LAP committee.

Required Courses for the Language Acquisition Option
(8 credits)
EDSL 620 (3) Critical Issues in Second Language Education
EDSL 623 (3) Second Language Learning
EDSL 624 (3) Educational Sociolinguistics
EDSL 627 (3) Classroom-Centred Second Language Research
EDSL 629 (3) Second Language Assessment
EDSL 632 (3) Second Language Literacy Development
EDSL 664 (3) Second Language Research Methods
LING 555 (3) Language Acquisition 2
LING 590 (3) Language Acquisition and Breakdown
LING 651 (3) Topics in Acquisition of Phonology
LING 655 (3) Theory of L2 Acquisition
LING 755 (3) Advanced Seminar: Language Acquisition
PSYC 561 (3) Methods: Developmental Psycholinguistics
PSYC 734 (3) Developmental Psychology and Language
PSYC 735 (3) Developmental Psychology and Language
PSYC 736 (3) Developmental Psychology and Language
PSYC 737 (3) Developmental Psychology and Language
SCSD 619 (3) Phonological Development
SCSD 632 (3) Phonological Disorders: Children
SCSD 633 (3) Language Development
SCSD 637 (3) Developmental Language Disorders 1
SCSD 643 (3) Developmental Language Disorders 2
SCSD 652 (3) Advanced Research Seminar 1
SCSD 653 (3) Advanced Research Seminar 2

Complementary Courses (9 credits)
3 credits of graduate-level statistics from courses such as:
EDPE 676, EDPE 682, PSYC 650, PSYC 651; students who
have taken an equivalent course in statistics, or are currently
taking an equivalent course as part of their Ph.D. program
requirements, will be deemed to have satisfied this requirement
for the Language Acquisition Option.

At least 6 credits, two courses, selected from the following list, at
least one course must be outside the Department of Integrated
Studies in Education:
EDSL 620 (3) Critical Issues in Second Language Education
EDSL 623 (3) Second Language Learning
EDSL 629 (3) Second Language Assessment
EDSL 664 (3) Second Language Research Methods
LING 555 (3) Language Acquisition 2
LING 590 (3) Language Acquisition and Breakdown
LING 651 (3) Topics in Acquisition of Phonology
LING 655 (3) Theory of L2 Acquisition
LING 755 (3) Advanced Seminar: Language Acquisition
PSYC 561 (3) Methods: Developmental Psycholinguistics
PSYC 734 (3) Developmental Psychology and Language
PSYC 735 (3) Developmental Psychology and Language
PSYC 736 (3) Developmental Psychology and Language
PSYC 737 (3) Developmental Psychology and Language
SCSD 619 (3) Phonological Development
SCSD 632 (3) Phonological Disorders: Children
SCSD 633 (3) Language Development
SCSD 637 (3) Developmental Language Disorders 1
SCSD 643 (3) Developmental Language Disorders 2
SCSD 652 (3) Advanced Research Seminar 1
SCSD 653 (3) Advanced Research Seminar 2

Dissertation

Ph.D. in Educational Studies –
Gender And Women's Studies Option

The Graduate Option in Gender and Women's Studies is an
interdisciplinary program for Educational Studies students who
meet degree requirements in Integrated Studies in Education (and
other participating departments and faculties) who wish to earn 9
credits of approved coursework focusing on gender and women's

Studies, and issues in feminist research and methods. The
student's doctoral thesis must be on a topic centrally relating to
issues of gender and/or women's studies.

Required Courses (14 credits)
EDEC 700 (2) Proseminar in Education 1
EDEC 702 (2) Proseminar in Education 2
EDEC 703 (2) Ph.D. Colloquium 1
EDEC 704 (2) Ph.D. Colloquium 2
EDEC 701 (0) Ph.D. Comprehensive Examination
(Normally taken at the end of the second year
for Ph.D. 2 program entrants and at the end
of the third year for Ph.D. 1 entrants.)
WMST 601 (3) Feminist Theories and Methods
WMST 602 (3) Feminist Research Symposium

Complementary Courses (6 credits)
One of:
EDEC 705 (3) Advanced Research Designs
EDEC 706 (3) Textual Approaches to Research
EDEC 707 (3) Interpretive Inquiry

Students preparing to register should consult Class Schedule
on the web at www.mcgill.ca/student-records/register/
class-schedule for the most up-to-date list of courses availa-
bile; courses may have been added, rescheduled or cancelled
after this Calendar was published. Class Schedule lists
courses by term and includes days, times, locations, and
names of instructors.

Single term and Multi-term Courses (D1/D2, N1/N2, J1/J2/J3)
The same course may be available as a single term offering and
also as a multi-term offering. The course content and credit weight
is equivalent in all modes; the only difference being the schedul-
ing.

Courses with numbers ending in D1 and D2 are taught in two
consecutive terms (most commonly Fall and Winter). Students
must register for the same section of both D1 and D2 compo-
nents. No credit will be given unless both components (D1 and D2)
are successfully completed in consecutive terms, e.g., Fall 2009
and Winter 2010.

Courses with numbers ending in N1 and N2 are taught in two
non-consecutive terms (Winter and Fall). Students must register
for the same section of both the N1 and N2 components. No credit
will be given unless both components (N1 and N2) are success-
fully completed within a twelve (12) month period.

Courses with numbers ending in J1, J2 and J3 are taught over
three consecutive terms. Students must register for the same sec-
tion of all three components (J1, J2, J3). No credit will be given
unless all three components are successfully completed.

For more information on Multi-term Courses, Course Terminol-
ogy, Class Schedule and Course Catalog, see the General Infor-
mation, Regulations and Research Guidelines, Graduate and
Postdoctoral Studies Calendar for 2009-10.

Denotes limited enrolment
39.6.1 EDEA – Arts Education

Courses currently scheduled for 2009-10:

EDEA 612 ART EDUCATION TUTORIAL. (3) (Restriction: Not open to those who have taken EDEA 612 6 credits - prior to 1993.) Tutorial based on candidate's research question, oriented toward development of a literature review and preparation for the research activity.

EDEA 652 APPROACHES TO MUSIC CURRICULUM. (3) An examination and critical assessment of music curriculum at the elementary or secondary level. Specific content of the course will vary from year to year.

39.6.2 EDEC – Curriculum and Instruction

Courses currently scheduled for 2009-10:

EDEC 602 FOUNDATIONS OF CURRICULUM. (3) The processes of development, implementation and evaluation will be studied from the perspective of the teacher. The focus will be on the role of the teacher as a curriculum professional at the preschool, elementary and secondary school levels.

EDEC 603 INDIVIDUAL READING COURSE. (6) Individualized guided study of a topic in the teaching of the candidates' specialties selected according to their interest and teaching experience.

EDEC 604 LITERACY AND LEARNING ACROSS CURRICULUM. (3) Examination of the central role of language in learning across the curriculum: the processes by which pupils acquire information and understanding and the ways in which teaching must take account of these processes: learning through talk, learning by writing, learning from text.

EDEC 606 SEMINAR IN CURRICULUM INQUIRY. (3) Students will be introduced to debates that are current in curriculum studies which centre on the appropriate emphasis to be accorded to traditions of schooling. To join the debate, students will need to explore the nature of a variety of traditions and the concomitant curricular manifestations and approaches to pedagogy.

EDEC 608 SELECTED READINGS IN LITERACY. (6) This course serves as a tutorial course that would normally involve the monograph supervisor. Students would concentrate their reading in an area pertinent to the monograph.

EDEC 610 LITERATURE: CHILDREN/YOUNG ADULTS. (3) An examination of the growth of children's literature from the Middle Ages to modern times, with special emphasis on its reflection of social, cultural, psychological and historical events, issues and norms of the times. Particular emphasis is given to its implications for school programs.

EDEC 612 MEDIA LITERACY. (3) The course examines the nature and possibilities of media literacy education in schooling, including both the development of students' ability to critically analyze the mass, visual, electronic media in society as well as the development of their own ability to utilize various new media for their own communication.

EDEC 616 READING COURSE. (3) Individualized guided study of a topic in the teaching of the candidates' specialties selected according to their interest and teaching experience.

EDEC 617 SPECIAL TOPICS - LITERACY STUDIES. (3)

EDEC 620 MEANINGS OF LITERACY. (3) (Restriction: Not open to students who have taken EDEC 620.) Investigation of basic issues related to definitions of literacy. Issues include new directions in literacy and education, the need for non-print literacies in contemporary life, and the challenges these changes present for educators.

EDEC 627 RESPONDING TO TEXTS. (3) An examination of current theory and research on response to texts and implications for classroom practice at the elementary, secondary, and post-secondary levels. A special emphasis on the processes involved in reading texts, theories of audiences, and researching and assessing response to texts.

EDEC 635 ADVANCED WRITTEN COMMUNICATION. (3) Rhetorical practices and principles that remain constant across disciplines: generating and organizing ideas; setting goals; planning; considering readers; editing and revising. Students will analyze and produce texts that use the formats, rhetorical strategies, styles, genres, and other conventions of their disciplines.

EDEC 645 SCIENCE WRITING AND PUBLISHING. (3) (Restriction: Limited to senior graduate students - Ph.D. 2 and above.) Techniques for writing reader-sensitive scientific articles and grant applications, including how to express abstract ideas.

EDEC 690 MONOGRAPH PREPARATION AND PRESENTATION. (12) The preparation and submission of a study project dealing with some aspect of the teaching of the candidate's specialization and supported by a comprehensive review of the relevant literature. The monograph is to be presented to the candidate's program director after the satisfactory completion of the required coursework.

EDEC 700 PROSEMINAR IN EDUCATION 1. (2) (Restriction: Limited to Doctoral students.) Students will be exposed to a wide range of educational theory and research as faculty members present the theoretical underpinnings, methodologies, and applications of their various programs of research.

EDEC 701 PH.D. COMPREHENSIVE EXAMINATION. (0) Comprehensive examination.

EDEC 702 PROSEMINAR IN EDUCATION 2. (2) (Restriction: Limited to Doctoral students) First-year doctoral students will be exposed to more advanced level of educational theory and research to experience the multidisciplinary nature of educational inquiry.

EDEC 703 PH.D. COLLOQUIUM 1. (2) (Restriction: Limited to Doctoral students) Second-year doctoral students will have opportunities to present their work for critical discussion and dialogue. This course will provide students with an introduction to fundamental issues and questions in the field of education.

EDEC 704 PH.D. COLLOQUIUM 2. (2) (Restriction: Limited to Doctoral students) Second-year doctoral students will have opportunities to present their work for critical discussion and dialogue. This course will provide students with a more advanced exposure to issues and questions in the field of education.

EDEC 705 ADVANCED RESEARCH DESIGNS. (3) (Restriction: Limited to Doctoral students) Examination of research methods that are supported by multiple research perspectives.

EDEC 706 TEXTUAL APPROACHES TO RESEARCH. (3) (Restriction: Limited to Doctoral students) Survey a range of research strategies including philosophical, theoretical, historical, narrative, and autobiographical methods of textual analysis.

EDEC 707 INTERPRETIVE INQUIRY. (3) (Restriction: Not open to students who have taken EDEC 679) Focus on issues of voice, reflectivity, and representation when using interpretive frameworks in qualitative research.

39.6.3 EDEE – Elementary Education

Courses currently scheduled for 2009-10:

EDEE 655 SPECIAL TOPICS - CURRICULUM STUDIES. (3) A detailed examination of a selected topic. The content will vary from year to year and will be announced prior to registration.

39.6.4 EDEM – Admin & Policy Studies in Education

Courses currently scheduled for 2009-10:

EDEM 603 INDIVIDUAL READING COURSE. (6) Independent study of an approved topic with the guidance of a faculty advisor.

EDEM 606 EDUCATIONAL LEADERSHIP ISSUES. (3) Critical analysis and appraisal of leadership issues across geographic, linguistic, racial, gender and cultural contexts from a comparative perspective. Students will analyze their own experience.

EDEM 609 INTRODUCTION TO EDUCATIONAL THEORY AND RESEARCH. (3) Critical exploration of contemporary issues in educational theory and research, in terms of current scholarship in the field, current educational contexts, and student research. Educational issues as expressions of social, political, economic, epistemological and cultural reconfigurations.
EDEM 610 LEADERSHIP IN ACTION. (3) Teaching of the use of reflective practice as a means of developing individual theories of action in educational settings. It provides students with the knowledge, skills and attitudes necessary to engage in processes that can improve individual and organizational performance. Special emphasis will be given to communication, problem solving and decision-making.

EDEM 615 SELECTED ISSUES: CONTEMPORARY EDUCATION. (6) Departmental seminar to guide students through the process of developing a thesis proposal, identifying a supervisor, research sites and participants, and considering ethical issues.

EDEM 623 THESIS 2. (6) Continuation of EDEM 621.

EDEM 625 PROJECT 1. (6) Theoretical or practical project under the supervision of a departmental faculty member to explore and analyze an area of interest relevant to the concentration in leadership or curriculum.

EDEM 627 PROJECT 2. (6) Extension of Project 1 or new project.

EDEM 628 EDUCATION RESOURCE MANAGEMENT. (3) An exploration of the concepts and skills necessary to manage the human and financial resources of small organizations (schools, NGOs, departments). Among the areas to be explored are labour contracts, supervision, grantsmanship, use of volunteers, managing site-based budgets.

EDEM 630 POLICY ISSUES: WORKPLACE LEARNING. (3) This course explores the complex policy climate in workplace learning in Canada and examines the pressures and choices facing program planners and instructors.

EDEM 635 FISCAL ACCOUNTABILITY IN EDUCATION. (3) Accountability in schools and education systems, public responsibility, budgeting, and measures of educational performance.

EDEM 637 MANAGING EDUCATIONAL CHANGE. (3) Conceptual approaches to managing school improvement and reform with applications such as conflict management, action planning, coaching, shared vision-building and problem solving.

EDEM 644 CURRICULUM DEVELOPMENT AND IMPLEMENTATION. (3) Processes of planning, developing, implementing and adapting curricula in various learning systems.

EDEM 646 PLANNING AND EVALUATION. (3) Knowledge and skills development in educational planning and monitoring at the service delivery unit (school, non-governmental organization, adult education centre). Areas of study include strategic management, results-based management, log frame analysis, systems assessment, stakeholders analysis, and fourth generation evaluation.

EDEM 660 COMMUNITY RELATIONS IN EDUCATION. (3) School-community relations and methods of encouraging public involvement in education.

EDEM 664 EDUCATION AND THE LAW. (3) The legal and institutional framework of Canadian education systems; legal terminology and the tools and methods of legal research; selected public and private law issues in Canadian education.

EDEM 671 THE PRINCIPALSHP. (3) Roles, expectations and skills related to the task of the school principal and the implications for school climate and effectiveness.

EDEM 673 LEADERSHIP THEORY IN EDUCATION. (3) Concepts of leadership and the role of leadership in educational settings.

EDEM 674 ORGANIZATIONAL THEORY AND EDUCATION. (3) Contemporary organization theories and their implications for education and the management of learning environments.

EDEM 675 SPECIAL TOPICS 1. (3) Important current issues in the field of Educational Studies. (Content varies from year to year.)

EDEM 677 SPECIAL TOPICS 2. (3) Important current issues in the field of Educational Studies. (Content varies from year to year.)

EDEM 681 PRACTICUM - ADMINISTRATIVE STUDIES. (3) Field studies and applied research, including the preparation of a research report.

EDEM 690 RESEARCH METHODS: PHILOSOPHY AND PRACTICE. (3) Overview of the epistemological foundations of a range of research methods, including but not limited to quantitative, philosophical, qualitative, arts-based, and mixed methods.

EDEM 692 QUALITATIVE RESEARCH METHODS. (3) Theoretical and practical exploration of the foundations of qualitative methods, with emphasis on underlying principles.

EDEM 693 SCHOOL IMPROVEMENT APPROACHES. (3) Analysis of action research approaches used to improve school performance.

EDEM 695 POLICY STUDIES IN EDUCATION. (3) Issues in the field of policy studies with specific reference to the formulation, analysis, and assessment of educational policies.

EDEM 699 THESIS 3. (12) Final synthesis of the research project.

EDEM 699N1 THESIS 3. (6) (Restriction: Not open to students who have taken 422-320 / EDER 320) An exploration of some of the techniques presently used in the teaching of Bible. Challenges facing the field of Jewish education are examined. Developments in general education of relevance to Jewish education are considered.

EDEM 699N2 THESIS 3. (6) (Prerequisite: EDEM 6991) (No credit will be given for this course unless both EDEM 699N1 and EDEM 699N2 are successfully completed in a twelve month period) Final synthesis of the research project.

39.6.5 EDER – Religious Studies

Courses currently scheduled for 2009-10

EDER 505 EDUCATION AND SOCIAL ISSUES. (3) A study of the philosophical aspects of major social issues to education, and of selected approaches to fostering critical thinking concerning such issues.

EDER 520 ISSUES IN JEWISH EDUCATION. (3) (Restriction: Not open to students who have taken 422-320 / EDER 320) An exploration of dissenting and complementary perspectives on the purpose of Jewish education. Challenges facing the field of Jewish education are examined. Developments in general education of relevance to Jewish education are considered.

EDER 523 TEACHING JUDAISM: BIBLE. (3) (Restriction: Not open to students who have taken 422-401 / EDER 401) (Prerequisite: Knowledge of Hebrew, with permission of instructor) A study of selected narrative, poetic and legal portions of the Pentateuch with a view to teaching this material in Jewish schools. An examination of some of the techniques presently used in the teaching of Bible.

EDER 525 TEACHING JUDAISM: HOLIDAYS. (3) (Restriction: Not open to students who have taken 422-250 / EDER 252) An exploration of the rituals, customs, values and historical development of Jewish holidays. Methods of applying this material to the Jewish studies classroom are examined.

EDER 526 TEACHING JUDAISM: LITURGY. (3) (Restriction: Not open to students who have taken 422-400 / EDER 407) (Prerequisite: Knowledge of Hebrew, with permission of instructor) An exploration of curriculum developed for teaching prayer and fostering spirituality within Jewish educational frameworks. Selected portions of the High Holy Day liturgy are examined with a view to teaching this material in Jewish settings.

EDER 527 TEACHING JUDAISM: SPECIAL TOPICS. (3) In-depth examination of topics in Jewish education. Content will vary from year to year.

EDER 528 TEACHING JUDAISM: THE HOLOCAUST. (3) (Restriction: Not open to students who have taken 422-421 / EDER 421) An exploration of approaches and techniques for the teaching of the Holocaust. Strategies for using Holocaust education as a basis for discussing prejudice and moral responsibility are examined.

EDER 600 GLOBALIZATION, EDUCATION & CHANGE. (3) The impact of globalization on educational institutions, processes and practices. Topics may include the politics of change, teachers’ work, educational reform, technology, environment, educational management and leadership.
EDER 603 INDIVIDUAL READING COURSE. (6)

EDER 606 PHILOSOPHY OF MORAL EDUCATION. (3) A study of principles underlying contemporary moral education such as what constitutes moral values and judgments, normative basis for morality, and differing foundations employed in determining moral norms.

EDER 607 VALUES EDUCATION: CONTEMPORARY APPROACHES. (3) A study of the objectives, content and approaches to the teaching of human and moral values. A critical examination of selected programs dealing with human and moral values.

EDER 608 EDUCATIONAL IMPLICATIONS OF SOCIAL THEORY. (3) An analysis of some of the educational implications of various social and political theories: liberalism, Marxism and others.

EDER 609 EDUCATION AND PHILOSOPHICAL THOUGHT. (3) An analysis of the educational implications of various philosophical positions concerning the nature of reality and the nature of knowledge.

EDER 610D1 (7.5), EDER 610D2 (7.5) INTERNSHIP. (Restriction: Only open to students in M.A. Culture and Values Non-Thesis (Jewish Education Option) (Students must register for both EDER 610D1 and EDER 610D2) (No credit will be given for this course unless both EDER 610D1 and EDER 610D2 are successfully completed in consecutive terms) Supervised fieldwork in a Jewish school or educational institution.

EDER 614 SOCIOLOGY OF EDUCATION. (3) Social context of schooling, including education and social stratification and socialization processes within and outside schools.

EDER 615 CULTURE, VALUES AND EDUCATION. (3) In-depth examination of culture and values in education.

EDER 616 INDIVIDUAL READING COURSE. (3)

EDER 617 AESTHETICS AND EDUCATION. (3) An examination and critical analysis of selected readings on the topic of aesthetics, with specific reference to their application to educational practice.

EDER 622 STUDIES IN COMPARATIVE EDUCATION. (3) Comparative study of the economic, political and social aspects of education systems.

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

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

EDER 633 PROJECT. (6) (Taken in final semester.) (Prerequisite: Completion of program course requirements.) (Restriction: Not open to students who have taken EDER 633 prior to 200609. For non-thesis students only.) Theoretical or practical project to explore and analyze an area of interest relevant to the concentration in culture and values in education.

EDER 634 PROJECT 2. (6) (Prerequisite: EDER 633 and completion of program course requirements.) (Restriction: Not open to students who have taken EDER 633 prior to 200609. For non-thesis students only.) Theoretical or practical project to explore and analyze an area of interest relevant to the concentration in culture and values in education.

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

EDER 643 WOMEN, EDUCATION AND DEVELOPMENT. (3) This course will trace the major theoretical developments in women and development and relate them to educational issues in the formal, non-formal and informal settings. There will be an emphasis on the significance and policy implications of women's education for sustainable developments in the countries of the South.

EDER 649 EDUCATION: MULTICULTURAL SOCIETIES. (3) (Due to the intensive nature of this course, the standard add/drop and withdrawal deadlines do not apply. Add/drop is the second lecture day and withdrawal is the fourth lecture day.) Majority-minority relations and their implications for educational policy and practice.

EDER 672 POLICY ON GENDER ISSUES. (3) An examination and analysis of recent research and policy positions on the influence of gender on hiring, performance, promotion and attrition in educational institutions at all levels.

EDER 690 THESIS PREPARATION 1. (6) A supervised comprehensive study and written review of the literature in the area of the student's thesis topic.

EDER 691 THESIS PREPARATION 2. (6) Supervised independent work leading to an elaborated written proposal of the student's thesis project, to be presented and defended at a colloquium convened by the Department.

EDER 692 THESIS PREPARATION 3. (12) Supervised on-going research and writing pertaining to the student's thesis. Submission of the completed thesis for examination and evaluation.

39.6.6 EDSL – Education in Second Language Education

Courses currently scheduled for 2009-10:

EDSL 500 FOUNDATIONS AND ISSUES IN SECOND LANGUAGE EDUCATION. (3) (Restriction: Restricted to students in the Graduate Certificate in TESL) Introduction of second language (L2) education; an overview of contributing disciplines (e.g., linguistics, psychology, sociology and education). A history of theory and various methodological approaches to L2 teaching and learning is used to promote an understanding of current theory and practice.

EDSL 505 SECOND LANGUAGE ACQUISITION APPLIED TO CLASSROOM CONTEXTS. (3) (Prerequisite: EDSL 500.) (Restriction: Restricted to students in the Graduate Certificate in TESL) An overview of theory and research in second language acquisition, including developmental patterns, factors affecting how second languages are learned, and relevance for teachers in terms of applications to the classroom context.

EDSL 512 GRAMMAR IN TEACHING ENGLISH AS A SECOND LANGUAGE. (3) (Summer) (Prerequisite: EDSL 505) (Restriction: Restricted to students in the Graduate Certificate in TESL) Analysis of English grammar at phonological, morphological, syntactic, semantic, and discourse levels. Applications are made to second language teaching and learning, focusing on integrating grammar into communicative language approaches.

EDSL 601 METHODS AND CURRICULUM IN TEACHING ESL. (3) (Prerequisite: EDSL 512) (Restriction: Restricted to students in the Graduate Certificate in TESL or with permission of the Graduate Program Director) (Due to the intensive nature of this course, the standard add/drop and withdrawal deadlines do not apply. Add/drop is the second lecture day and withdrawal is the fourth lecture day.) Adapting and elaborating strategies in language and content lessons for second language learners, including materials selection and development, activities and assessment in a variety of programs.

EDSL 602 SECOND LANGUAGE READING AND WRITING DEVELOPMENT. (3) (Prerequisite: EDSL 512) (Restriction: Restricted to students in the Graduate Certificate in TESL or with permission of the Graduate Program Director) (Due to the intensive nature of this course, the standard add/drop and withdrawal deadlines do not apply. Add/drop is the second lecture day and withdrawal is the fourth lecture day.) Current theories and models of second language literacy development and their implications for teaching, including the use of literature as a tool for language learning. Key issues include the nature of literacy development, reading and writing processes, and appropriate pedagogical approaches and techniques.

EDSL 603 INDIVIDUAL READING COURSE 1. (6) Independent study of an approved topic with the guidance of individual instructor and permission of Graduate Program Director.
EDSL 616 INDIvidual REAding Course 2. (3) Independent study of an approved topic with the guidance of individual instructor and permission of Graduate Program Director.

EDSL 617 SPECIAL TopiC in Second LANGUAGE EDUCATION. (3) In-depth study of a current topic in Second Language Education. (In conjunction with EDSL 630.)

EDSL 620 CRITICAL ISSUES in SECOND LANGUAGE EDUCATION. (3) An examination of social identity, first language maintenance, and power relations, and their impact on the nature of second language teaching, from the perspective of critical applied linguistics. Topics range from the micro level of the individual to the macro level of language planning and policy-making.

EDSL 623 SECOND LANGUAGE LEARNING. (3) Seminar in second language acquisition theory and research and their relevance to teaching a second language.

EDSL 624 EDUCATIONAL SOCIOLINGUISTICS. (3) Seminar in the social, cultural and political dimensions of English second language learning and teaching.

EDSL 627 CLASSROOM-CENTRED SECOND LANGUAGE RESEARCH. (3) Seminar in second language classroom-centred research focusing on instructional procedures and practices in relationship to learning outcomes.

EDSL 629 SECOND LANGUAGE ASSESSMENT. (3) Research, theory, issues and practices in second language assessment in relationship to learners, teachers, and programs.

EDSL 630 QUALITATIVE/ETHNOGRAPHIC METHODS. (3) An examination of theoretical and applied issues in qualitative and ethnographic studies in second language education.

EDSL 631 SECOND LANGUAGE CURRICULUM. (3) Research, theory and practice in curriculum development and teaching in second language education within contemporary frameworks.

EDSL 632 SECOND LANGUAGE LITERACY DEVELOPMENT. (3) Theory and research related to the teaching and learning of second language literacy. The orientation is on reading and writing as a socio-cognitive activity.

EDSL 651 CONTENT-BASED L2 LEARNING. (3) Theoretical research underpinnings of learning a second language through content-based approaches and analysis of empirical studies undertaken in a wide range of immersion and other content-based L2 classrooms.

EDSL 664 SECOND LANGUAGE RESEARCH METHODS. (3) An examination of general research procedures and specific research methods and designs employed in second language research.

EDSL 666 THESIS RESEARCH 1. (6) Submission of a thesis proposal.

EDSL 667 THESIS RESEARCH 2. (6) Presentation of thesis proposal.


EDSL 711 LANGUAGE ACQUISITION ISSUES 3. (2)
41.2 Programs Offered

Courses of study and research are offered leading to the degrees of M.A. and Ph.D. in Islamic Studies, and a Graduate Diploma in Islamic Studies.

In its academic programs, the Institute of Islamic Studies focuses on several aspects of medieval, early modern and modern Islamic societies. Courses and research are offered in the fields of law, philosophy, history, politics, science, literature and languages.

The Islamic Studies Library is especially strong in its reference materials and periodical holdings for the Islamic regions. The collection, one of the largest in North America, contains over 100,000 volumes in the principal European languages as well as in Arabic, Persian, Turkish, Urdu and other Islamic languages.

41.3 Admission Requirements

Applicants must have a degree (B.A. or M.A.) from a recognized university, with a minimum cumulative grade point average (CGPA) of 3.0 out of 4 (or equivalent), OR a grade point average (GPA) of 3.2 out of 4 in the last two years of full-time studies, according to Canadian standards. The degree should be in the Humanities or Social Sciences, preferably in Islamic or Middle Eastern 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 submit acceptable evidence of competence in English before their application for admission can be considered. GRE scores are not required.

Please see the Graduate and Postdoctoral Studies website for more information, www.mcgill.ca/gradapplicants/apply.

41.4 Application Procedures

Applications will be considered upon receipt of:
1. McGill University application form;
2. two originals of all official university transcripts (B.A. and/or M.A. if applicable);
3. two letters of recommendation for M.A. applications OR three letters of recommendation for Ph.D. applications;
4. application fee of $100, payable by credit card;
5. proof of English competency (if applicable);
6. Institute of Islamic Studies Academic Information Background form;
7. copy of M.A. thesis for Ph.D. applicants.

Dates for Guaranteed Consideration

For dates for guaranteed consideration, please consult the following website: www.mcgill.ca/gradapplicants/apply. Then select the appropriate program.

All application documents must be submitted directly to the Chair, Admissions Committee, Institute of Islamic Studies before the dates for guaranteed consideration.

McGill’s online application form for graduate program candidates is available at www.mcgill.ca/gradapplicants/apply.

41.5 Program Requirements

M.A. in Islamic Studies (Thesis) (45 credits)

The M.A. in Islamic Studies will be granted upon successful completion of the following requirements:

Required Course (27 credits)

ISLA 603 (3) Introductory: Research Materials - Islamic Studies

* Unless exempt. If exempt, another graduate-level course must replace this course.

Thesis (24 credits)

ISLA 697 (6) Thesis Research
ISLA 698 (6) Thesis Research
ISLA 699 (12) Thesis Research

Complementary Courses (18 credits)

3 credit seminar course at the 600- or 700-level.
15 credits of ISLA courses at the 500 level or higher.

With permission of the Institute, up to 6 credits from other departments at McGill or other educational institutions can be used.

Language Requirement:

Students must demonstrate proficiency in Arabic at the second-year level as evidenced by completion of ISLA 522 or by an examination administered by the Institute.

Ph.D. in Islamic Studies

The Ph.D. program requirements are:

Required Coursework (30 credits)

Five 6-credit courses (or equivalent) for a total of 30 credits at the 500 level or higher, including two 700-level seminars offered by the Institute.

Complementary Courses

at the 500 level or higher
ISLA 523 (6) Higher Intermediate Arabic

All Ph.D. students are required to have completed 3 years of Arabic language study at the IIS. Students who do not take the third level of Arabic at the Institute may demonstrate their competence by taking a proficiency examination set by the staff of the IIS.

In addition to Arabic, all Ph.D. students are required to have completed the equivalent of two years of language study at the IIS of another Islamic language (i.e., Turkish, Persian, Urdu, Bahasa-Indonesia, etc.). They may demonstrate competence in this language by taking a proficiency examination set by the staff of the IIS. Students are, of course, responsible for whatever higher levels are required for their research.

In addition to English, reading knowledge of one non-Islamic European language at the second year level of scholarly competence will be required for the Ph.D. (i.e., French, German, Russian, Spanish, Dutch, Italian, etc.).

Comprehensive – Required

ISLA 701 (0) Comprehensive Examination
in three specified fields

Dissertation

A dissertation judged to contain original research. Upon approval of the dissertation, a “pass” must be received at the final oral examination.

Ph.D. in Islamic Studies – Gender and Women's Studies

Option/Concentration

The Graduate Option in Gender and Women's Studies is an interdisciplinary program for students who meet the degree requirements in Islamic Studies who wish to earn 6 credits of approved coursework focusing on gender and women's studies, and issues in feminist research and methods. The student's Ph.D. thesis must be on a topic centrally relating to issues of gender and/or women's studies.

Required Coursework (30 credits)

Five 6-credit courses (or equivalent) for a total of 30 credits at the 500 level or higher, including two 700-level seminars offered by the Institute, and WMST 601 (3) Feminist Theories and Methods
WMST 602 (3) Feminist Research Symposium
AND an additional 3 credits in a course with a substantive focus on women and/or gender (e.g., ISLA 739 (3) Special Seminar).

**Complementary Courses**

at the 500 level or higher

ISLA 523  (6) Higher Intermediate Arabic

All Ph.D. students are required to have completed 3 years of Arabic language study at the IIS. Students who do not take the third level of Arabic at the Institute may demonstrate their competence by taking a proficiency examination set by the staff of the IIS.

In addition to Arabic, all Ph.D. students are required to have completed the equivalent of two years of language study at the IIS of another Islamic language (i.e., Turkish, Persian, Urdu, Bahasa-Indonesia, etc.). They may demonstrate competence in this language by taking a proficiency examination set by the staff of the IIS. Students are, of course, responsible for whatever higher levels are required for their research.

In addition to English, reading knowledge of one non-Islamic European language at the second year level of scholarly competence will be required for the Ph.D. (i.e., French, German, Russian, Spanish, Dutch, Italian, etc.).

**Comprehensive – Required**

ISLA 701  (0) Comprehensive Examination in three specified fields

**Dissertation**

A dissertation judged to contain original research and on a topic centrally relating to issues of gender or women’s studies. Upon approval of the dissertation, a “pass” must be received at the final oral examination.

**Graduate Diploma in Islamic Studies (30 credits)**

With a B.A. in Islamic Studies (or its equivalent), applicants may be admitted to this non-degree program which requires the completion of 30 credits of course work in *one academic year*. Students must fulfill a language requirement of Arabic at second year level, ISLA 522 or equivalent.

If awarded this Diploma with high standing, they may be allowed to proceed to a higher degree in Islamic Studies.

**Complementary Courses (30 credits)**

at least 18 credits, six 3-credit (or equivalent) graduate-level ISLA courses.

at most 12 credits, four 3-credit (or equivalent) courses, normally at the graduate-level, from related fields.

**41.6 Courses**

Students preparing to register should consult Class Schedule on the web at [www.mcgill.ca/student-records/register/class-schedule for the most up-to-date list of courses available; courses may have been added, rescheduled or cancelled after this Calendar was published. Class Schedule lists courses by term and includes days, times, locations, and names of instructors.

Term(s) offered (Fall, Winter, Summer) may appear after the credit weight to indicate when a course would normally be taught. Please check Class Schedule to confirm this information.

Courses with numbers ending D1 and D2 are taught in two consecutive terms (most commonly Fall and Winter). Students must register for both the D1 and D2 components. No credit will be given unless both components (D1 and D2) are successfully completed in consecutive terms.

**Note:** All undergraduate courses administered by the Faculty of Arts (courses at the 100 to 500 level) have limited enrolment.

★ Denotes courses taught only in alternate years.

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

**ISLA 501 THE QUR’AN: TEXT AND HISTORY.** (3) A study of the Qur’an’s teachings, structures, style, and history in the light of classical and modern scholarship. This course is not scheduled for 2009-2010 academic year.

**ISLA 506 ISLAM: LATER DEVELOPMENTS.** (3) (Fall) (3 hours) How the basic elements of Islam have been understood in the course of later Islamic history up to the present day. The nature and development of Shi’ism, Sufi brotherhoods, major intellectual trends, Islam in a world of nation states, diaspora. The challenges of modernity and the contemporary world.

★ **ISLA 510D1 (3), ISLA 510D2 (3) HISTORY: ISLAMIC CIVILIZATION - CLASSICAL.** (Fall and Winter) (3 hours) (Students must register for both ISLA 510D1 and ISLA 510D2.) (No credit will be given for this course unless both ISLA 510D1 and ISLA 510D2 are successfully completed in consecutive terms) The rise of the Fatimids. The Caliphate of Cordoba. The Mamluks, Persian, Turkish and Indian Empires until 1700.

This course is not scheduled for 2009-2010 academic year.

**ISLA 511D1 (3), ISLA 511D2 (3) HISTORY: ISLAMIC CIVILIZATION - MEDIAEVAL ERA.** (Fall and Winter) (3 hours) (Students must register for both ISLA 511D1 and ISLA 511D2.) (No credit will be given for this course unless both ISLA 511D1 and ISLA 511D2 are successfully completed in consecutive terms) The Seljuks, and the medieval synthesis. The Moors in Spain and North Africa. The Crusades. The Mongols and the destruction of the Baghdad Caliphate. The Mamluk, Persian, Turkish and Indian Empires until 1700. This course is not scheduled for 2009-2010 academic year.

**ISLA 521D1 (4.5), ISLA 521D2 (4.5) INTRODUCTORY ARABIC.** (Fall and Winter) (5 lecture hours and laboratory) (Students must register for both ISLA 521D1 and ISLA 521D2.) (No credit will be given for this course unless both ISLA 521D1 and ISLA 521D2 are successfully completed in consecutive terms) Modern Standard Arabic (non-spoken).

**ISLA 522 LOWER INTERMEDIATE ARABIC.** (6) (Summer) (3 hours and laboratory) (Prerequisite: ISLA 521 or equivalent)

**ISLA 522D1 (3), ISLA 522D2 (3) LOWER INTERMEDIATE ARABIC.** (Fall and Winter) (3 hours and laboratory) (Prerequisite: ISLA 521 or equivalent) (Students must register for both ISLA 522D1 and ISLA 522D2.) (No credit will be given for this course unless both ISLA 522D1 and ISLA 522D2 are successfully completed in consecutive terms) Modern Standard Arabic (non-spoken).

**ISLA 523D1 (3), ISLA 523D2 (3) HIGHER INTERMEDIATE ARABIC.** (Fall and Winter) (3 hours) (Prerequisite: ISLA 522 or equivalent) (Formerly 397-623) (Students must register for both ISLA 523D1 and ISLA 523D2.) (No credit will be given for this course unless both ISLA 523D1 and ISLA 523D2 are successfully completed in consecutive terms)

**ISLA 532D1 (3), ISLA 532D2 (3) INTRODUCTORY TURKISH.** (Fall and Winter) (3 lecture hours plus conference and laboratory) (Students must register for both ISLA 532D1 and ISLA 532D2.) (No credit will be given for this course unless both ISLA 532D1 and ISLA 532D2 are successfully completed in consecutive terms)

**ISLA 533D1 (3), ISLA 533D2 (3) HIGHER INTERMEDIATE TURKISH.** (Fall and Winter) (3 lecture hours plus conference and laboratory) (Prerequisite: ISLA 532 or equivalent) (Students must register for both ISLA 533D1 and ISLA 533D2.) (No credit will be given for this course unless both ISLA 533D1 and ISLA 533D2 are successfully completed in consecutive terms)

**ISLA 541D1 (3), ISLA 541D2 (3) INTRODUCTORY PERSIAN.** (Fall and Winter) (3 hours) (Students must register for both ISLA 541D1 and ISLA 541D2.) (No credit will be given for this course unless both ISLA 541D1 and ISLA 541D2 are successfully completed in consecutive terms)
ISLA 542D1 (3), ISLA 542D2 (3) LOWER INTERMEDIATE PERSIAN. (Fall and Winter) (3 hours) (Prerequisite: ISLA 541 or equivalent) (Students must register for both ISLA 542D1 and ISLA 542D2.) (No credit will be given for this course unless both ISLA 542D1 and ISLA 542D2 are successfully completed in consecutive terms) ISLA 551D1 (3), ISLA 551D2 (3) INTRODUCTORY URDU. (Fall and Winter) (3 hours) (Students must register for both ISLA 551D1 and ISLA 551D2.) (No credit will be given for this course unless both ISLA 551D1 and ISLA 551D2 are successfully completed in consecutive terms) Introduction to the basic grammatical structures and vocabulary of the Urdu language, including drills in pronunciation and sentence structures.

ISLA 552D1 (3), ISLA 552D2 (3) INTERMEDIATE URDU. (Fall and Winter) (3 hours) (Prerequisite: ISLA 551 or equivalent) (Students must register for both ISLA 552D1 and ISLA 552D2.) (No credit will be given for this course unless both ISLA 552D1 and ISLA 552D2 are successfully completed in consecutive terms) Assuming a knowledge of basic grammar and vocabulary, this course continues with the study of more complex grammatical structures. Reading and composition exercises in Urdu script are designed to give intermediate competency in the language.

ISLA 553 ADVANCED URDU 1. (3) This course is not scheduled for 2009-2010 academic year.

ISLA 581 SPECIAL TOPICS 1. (3) (Note: Subject matter will vary year to year, according to the instructor. Topic will be announced at the beginning of the term.) Selected topics in Islamic studies.

ISLA 585 ARAB WOMEN’S LITERATURE. (3) (Prerequisite: ISLA 392 or permission of instructor.) (Note: Readings in English translation.) Explorations of writings by Arab women. Issues include: translation/reception, genre and gender, categories of knowledge about Arab women, feminist and post-colonial theories/methodologies.

This course is not scheduled for 2009-2010 academic year.

ISLA 601 ANTHROPOLOGY AND IRANIAN STUDIES. (3) (Fall) Advanced examination of research issues in the field of modern history and anthropology of Iran. Topics will include the social construction of knowledge, politics and society, cultural history and technology.

ISLA 602 ISLAMIC PHILOSOPHY & THEOLOGY. (3) (Advanced examination of research issues in the field of Islamic philosophy and theology. Topics will include dialectic, metaphysics, the commentary traditions and 19th century Kalam.) This course is not scheduled for 2009-2010 academic year.

ISLA 603 INTRODUCTORY: RESEARCH MATERIALS - ISLAMIC STUDIES. (3) (Fall 2009) (Non-credit) (2 hours) (Compulsory for M.A. students; recommended for Ph.D. students) Some discussion of research methods, the preparation of reports and essays, documentation; transliteration; WWW/Gophers/Databases and on-line catalogue searching; resources for research and teaching. Particular attention given to special reference books and serials used in the field.

ISLA 604 ARABIC MANUSCRIPT TRADITION. (3) (Fall) This course will examine the way manuscript books were bound, transcribed, decorated, collated, corrected and glossed. It will deal with various scribal practices employed in the critical apparatus, including abbreviations, and will provide practical assistance on how to locate and choose a manuscript for text editing.

ISLA 605 MUSLIM INDIA & PAKISTAN. (3) (Historiographical and research issues in the field of Indo-Islamic history; “people of the pen” and “people of the sword” and ruling institutions in Muslim India; madrasah and khanqah and the process of conversion; the British Raj and the challenges of modernity; Pakistan: nation state versus Islamic state - issues and debates. This course is not scheduled for 2009-2010 academic year.

ISLA 607 ISLAM AND POLITICS: PAKISTAN. (3) Religious and institutional developments from later Mughal and British periods (1707-1947) to present; questions of Muslim identity and separatism; creation of Pakistan - an ideological or a modern state?; evolution of Islamic thought; the traditionalists and modernists; interplay of religion and politics; and the experiment of Islamization and its aftermath. This course is not scheduled for 2009-2010 academic year.

ISLA 608 ISLAM AND POLITICS: IRAN. (3) Religious and institutional developments from pre-modern Safavid Iran (1501-1795) to present; evolution of Shi’i theory of government; ‘ulama’ and politics; challenges of modernity; impact of 1979 Islamic Revolution on Iranian society; ideological conflict between traditionalists and reformists; intellectual cross-currents; and women’s issues in post-Revolution Iran. This course is not scheduled for 2009-2010 academic year.

ISLA 610 PERSIAN LITERATURE. (3) (Winter) Advanced examination of research issues in the field of Persian literature. Topics will include modern and medieval Persian poetry and prose; women in early Qajar Iran, c. 1795-1850.

ISLA 611 PRE-MODERN ISLAMIC HISTORY. (3) Advanced examination of research issues in the field of pre-modern Islamic history. Topics will include Shi’ite doctrine and law (fikih), the Safavid Empire, and Shi’ites in Iran, Iraq and Lebanon.

This course is not scheduled for 2009-2010 academic year.

ISLA 613 WOMEN IN CONTEMPORARY MIDDLE EAST. (3) (Fall 2009) Advanced examination of research issues related to the experiences of women in the contemporary Middle East. Topics will include patriarchy, women and Islam, women and the state, nationalism and anti-colonialism struggles; labour, public space and theoretical issues.

ISLA 616 MODERN ARABIC LITERATURE. (3) Advanced examination of research issues in the field of Arabic literature. Topics will include women’s literature, gender and nationalism in literature, language use in literature and the diasporic literatures of the Middle East.

This course is not scheduled for 2009-2010 academic year.

ISLA 624 ADVANCED ARABIC 1. (3) (Prerequisite: ISLA 523D1/2 or permission of instructor.) (Restriction: Not open to students who have taken ISLA 624D1/2.) (Note: Language of instruction is Arabic.) Advanced level of the Arabic language study.

ISLA 625 ADVANCED ARABIC 2. (3) (Prerequisite: ISLA 624 or permission of instructor.) (Restriction: Not open to students who have taken ISLA 624D1/2.) (Note: Language of instruction is Arabic.) Advanced level of the Arabic language study.

This course is not scheduled for 2009-2010 academic year.

ISLA 633D1 (3), ISLA 633D2 (3) HIGHER INTERMEDIATE TURKISH. (Prerequisite: ISLA 532 or equivalent) (Students must register for both ISLA 633D1 and ISLA 633D2) (No credit will be given for this course unless both ISLA 633D1 and ISLA 633D2 are successfully completed in consecutive terms) This course is not scheduled for 2009-2010 academic year.

ISLA 642 UPPER INTERMEDIATE PERSIAN 1. (3) (Fall) (Prerequisite: ISLA 542 or permission of instructor.) (Restriction: Not open to students who have taken ISLA 642D1/2.) (Note: Language of instruction is Persian.) Upper intermediate level of Persian language study.

ISLA 643 UPPER INTERMEDIATE PERSIAN 2. (3) (Winter) (Prerequisite: ISLA 642 or permission of instructor.) (Restriction: Not open to students who have taken ISLA 643D1/2.) (Note: Language of instruction is Persian.) Continuation of upper intermediate level of Persian language study.

ISLA 644 ADVANCED PERSIAN 1. (3) (Fall) (Prerequisite: ISLA 643 or permission of instructor.) (Restriction: Not open to students who have taken ISLA 643D1/2.) (Note: Language of instruction is Persian.) Advanced level of Persian language study.

ISLA 645 ADVANCED PERSIAN 2. (3) (Prerequisite: ISLA 644 or permission of instructor.) (Restriction: Not open to students who have taken ISLA 644D1/2.) (Note: Language of instruction is Persian.) Advanced level of Persian language study.

This course is not scheduled for 2009-2010 academic year.
ISLA 670 ISLAMIC LAW. (3) Advanced examination of research issues in the field of Islamic law. Topics will include modernity, gender, family law, and property. This course is not scheduled for 2009-2010 academic year.

ISLA 680 PRO-SEMINAR: OTTOMAN INSTITUTIONS. (3) This course is not scheduled for 2009-2010 academic year.

ISLA 681 SPECIAL TOPICS 2. (3) (Winter) (Note: Subject matter will vary from year to year, according to the instructor. Topic will be announced at the beginning of the term.) Selected topics in Islamic studies.

ISLA 682 ISLAMIC POLITICS IN AFRICA. (3) Advanced examination of research issues in the field of Islamic politics in Africa. Topics will include: Political Islam; social movement perspectives; Islam, state-building and civil conflict; the political economy of Islamist extremism, and globalization; informal markets and the rise of the politics of identity. This course is not scheduled for 2009-2010 academic year.

ISLA 683 HISTORY OF SCIENCE IN ISLAM. (3) (Fall) Advanced examination of research issues in the historiography of Islamic science. These include: the appropriation and naturalization of ancient Greek science by Islamic scientists; the Arabic-Latin translation movement and the influence of Islamic science on medieval and Renaissance Europe; and the question of the post-medieval decline of Islamic science.

ISLA 697 THESIS RESEARCH. (6) (Seminar 2 hours) Six credits for accepted thesis proposal.

ISLA 697D1 (3), ISLA 697D2 (3) THESIS RESEARCH. (Students must register for both ISLA 697D1 and ISLA 697D2) (No credit will be given for this course unless both ISLA 697D1 and ISLA 697D2 are successfully completed in consecutive terms) (ISLA 697D1 and ISLA 697D2 together are equivalent to ISLA 697) Six credits for accepted thesis proposal.

ISLA 698 THESIS RESEARCH. (6) (Seminar 2 hours) Six credits for submission of completed thesis.

ISLA 698D1 (3), ISLA 698D2 (3) THESIS RESEARCH. (Students must register for both ISLA 698D1 and ISLA 698D2) (No credit will be given for this course unless both ISLA 698D1 and ISLA 698D2 are successfully completed in consecutive terms) (ISLA 698D1 and ISLA 698D2 together are equivalent to ISLA 698) Six credits for submission of completed thesis.

ISLA 699 THESIS RESEARCH. (12) (Fall and Winter) Twelve credits for thesis passed by Internal and External examiners.

ISLA 699D1 (6), ISLA 699D2 (6) THESIS RESEARCH. (Students must register for both ISLA 699D1 and ISLA 699D2) (No credit will be given for this course unless both ISLA 699D1 and ISLA 699D2 are successfully completed in consecutive terms) (ISLA 699D1 and ISLA 699D2 together are equivalent to ISLA 699) Twelve credits for thesis passed by Internal and External examiners.

ISLA 701 COMPREHENSIVE EXAMINATION. (0) (Fall and Winter) ★ ISLA 70SD1 (3), ★ISLA 70SD2 (3) STATE AND GOVERNMENT IN ISLAM. (Students must register for both ISLA 70SD1 and ISLA 70SD2) (No credit will be given for this course unless both ISLA 70SD1 and ISLA 70SD2 are successfully completed in consecutive terms) Survey of the evolution of the various patterns and concrete manifestations of Islamic political theory through the classical and medieval periods of Islamic history. The rise of modern states and relations between religion and politics in various Muslim countries. This course is not scheduled for 2009-2010 academic year.

ISLA 706D1 (3), ISLA 706D2 (3) ISLAMIC LAW. (Students must register for both ISLA 706D1 and ISLA 706D2) (No credit will be given for this course unless both ISLA 706D1 and ISLA 706D2 are successfully completed in consecutive terms) The nature of the law, its origins and historical development, the medieval schools of law, modern evolution of the law, and its roles in Islamic religious and political thought. This course is not scheduled for 2009-2010 academic year.

ISLA 707 QUR’AN EXEGESIS (CLASSICAL). (3) (Seminar 2 hours) (Prerequisite: Reading knowledge of Arabic) A study of two or three suras of the Qur'an as interpreted by classical exegetes. The suras considered will vary from year to year. This course is not scheduled for 2009-2010 academic year.

ISLA 709 PROBLEMS IN SH’AH THOUGHT. (3) This course is not scheduled for 2009-2010 academic year.

ISLA 711 ISLAMIC JURISPRUDENCE. (3) (Seminar 2 hours) (Prerequisite: Reading knowledge of Arabic) Contents of this course change from year to year. This course is not scheduled for 2009-2010 academic year.

ISLA 715 ADVANCED STUDIES IN ISLAMIC LAW. (3) (Seminar, 2 hours) (Prerequisite: Reading knowledge of Arabic and ISLA 711 or consent of the instructor) An intensive investigation of the theory of law and methodology of juristic construction as expounded in the classical Arabic texts of Islamic jurisprudence. This course is not scheduled for 2009-2010 academic year.

ISLA 716 ISLAMIC LEGAL DISCOURSE. (3) A study of the modes in which medieval Muslim jurists gave expression to their individual theories of law. This course is not scheduled for 2009-2010 academic year.

★ ISLA 723D1 (3), ★ISLA 723D2 (3) ISLAMIC DEVELOPMENTS - MODERN INDIA AND PAKISTAN. (Fall and Winter) (Students must register for both ISLA 723D1 and ISLA 723D2) (No credit will be given for this course unless both ISLA 723D1 and ISLA 723D2 are successfully completed in consecutive terms) Significant movements in Islamic thought and political action, since the Mughal downfall. The influence of Sirhind; Waliyullah and his school; the Mujahidin; 1857, De'oband; Aligarh; Azad and Muslim participation in Indian nationalism; Iqbal; Pakistan. Pakistan constitutional and ideological issues; birth of Bangladesh and subsequent developments; Muslims in India since partition.

★ ISLA 732D1 (3), ★ ISLA 732D2 (3) RISE AND EVOLUTION - NATIONALISM AMONG MUSLIMS. (Students must register for both ISLA 732D1 and ISLA 732D2) (No credit will be given for this course unless both ISLA 732D1 and ISLA 732D2 are successfully completed in consecutive terms) A comparative approach to the motivation and ideology in nationalist movements among Muslim peoples. Analysis of general trends and distinctive characteristics in various nationalist movements and their orientations, and the doctrinal disputes among Muslim intellectuals who attempted to explore the nature of the nation and its making in relation to universalist ideas of Islam.

This course is not scheduled for 2009-2010 academic year.

ISLA 735 SPECIAL SEMINAR. (3) (Fall and Winter) ISLA 736 SPECIAL TOPICS 3. (3) This course is not scheduled for 2009-2010 academic year.

ISLA 739 SPECIAL SEMINAR. (3) (Fall and Winter) ISLA 740D1 (3), ISLA 740D2 (3) MYSTICAL TRADITION OF ISLAM. (Seminar 2 hours) (Students must register for both ISLA 740D1 and ISLA 740D2) (No credit will be given for this course unless both ISLA 740D1 and ISLA 740D2 are successfully completed in consecutive terms) The varieties of mystical thought in Islam, primarily as seen in Sufism, its historical development and its place in Islamic culture. Analytical study of major authors, their writings and their central problems. Reading of primary sources in Arabic and Persian.

This course is not scheduled for 2009-2010 academic year.

ISLA 745 SPECIAL SEMINAR. (3) (Fall 2009; Winter 2010) ISLA 749D1 (3), ISLA 749D2 (3) SPECIAL TOPICS 4. (Students must register for both ISLA 749D1 and ISLA 749D2) (No credit will be given for this course unless both ISLA 749D1 and ISLA 749D2 are successfully completed in consecutive terms) This course is not scheduled for 2009-2010 academic year.

★ ISLA 752D1 (3), ★ ISLA 752D2 (3) SOCIAL/ECONOMIC DEVELOPMENTS / MUSLIM COUNTRIES. (Seminar, 2 hours) (Students must register for both ISLA 752D1 and ISLA 752D2) (No credit will be given for this course unless both ISLA 752D1 and ISLA 752D2 are successfully completed in consecutive terms) A study of development problems in the light of a historical survey of various reform policies in different countries; contemporary ideas of, and policy issues in the field of Islamic law. Topics will include: modernity, gender, family law, and property. This course is not scheduled for 2009-2010 academic year.
towards, development as shown in economic, technical, political and educational measures; with emphasis on the relevance of Islamic values to development problems. This course is not scheduled for 2009-2010 academic year.

★ ISLA 764D1 (3). ★ ISLA 764D2 (3) OTTOMAN HISTORY. (Seminar 2 hours) (Students must register for both ISLA 764D1 and ISLA 764D2) (No credit will be given for this course unless both ISLA 764D1 and ISLA 764D2 are successfully completed in consecutive terms) A critical examination of significant developments in political, social and economic spheres. This course is not scheduled for 2009-2010 academic year.

ISLA 770 ISLAMIC LOGIC. (3) This course is not scheduled for 2009-2010 academic year.

ISLA 777 ISLAMIC PHILOSOPHY. (3) (Fall) Seminar 2 hours Consideration of the development of philosophic thought among the Muslims. Classical Arabic or Persian writings will be used.

ISLA 785 MODERN ARABIC LITERATURE 1. (3) This course is not scheduled for 2009-2010 academic year.

ISLA 788 SPECIAL TOPICS IN ISLAMIC THOUGHT. (3) This course is not scheduled for 2009-2010 academic year.

ISLA 789 SPECIAL TOPICS 5. (3) (Winter)

### 42 Italian Studies

Department of Italian Studies
688 Sherbrooke Street West, Room 425
Montreal, QC H3A 3R1
Canada

Telephone: 514-398-3953
Fax: 514-398-1748
Email: italian.studies@mcgill.ca
Website: www.mcgill.ca/italian

Chair — Lucienne Kroha
Graduate Director — Lucienne Kroha

#### 42.1 Staff

Emeritus Professor
Pamela D. Stewart; B.A.(Montr.), M.A.(McG.), F.R.S.C.

Associate Professor
Lucienne Kroha; B.A., M.A.(McG.), Ph.D.(Harv.)

Assistant Professor
Matteo Soranzo; Dott.Lett.(Padua), Ph.D.(Wis.)

#### 42.2 Programs Offered


#### 42.3 Admission Requirements

The B.A. degree with Honours or Joint Honours in Italian or its equivalent and a CGPA of 3.2 constitute the minimum requirement. Applicants who do not have these prerequisites may be admitted to a Qualifying Year, or, in some cases, to a Qualifying Term.

#### 42.4 Application Procedures

Applications will be considered upon receipt of:
1. application form;
2. two certified copies of all university transcripts (all transcripts not in English or French must be accompanied by a certified English or French translation);
3. two letters of recommendation (in English or French);
4. a sample critical essay, written in Italian;
5. 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 a TOEFL. Minimum score of 86, with each component score not less than 20, required on the internet-based TOEFL examination. Proof of TOEFL must be presented at time of application or shortly thereafter;
6. application fee of $100;
7. statement of academic intent.

#### Dates for Guaranteed Consideration

For dates for guaranteed consideration, please consult the following website: www.mcgill.ca/gradapplicants/programs. Then select the appropriate program.

McGill’s online application form for graduate program candidates is available at www.mcgill.ca/gradapplicants/apply.

#### 42.5 Program Requirements

**Master’s Programs**

The course work and the thesis and/or research papers must demonstrate that the student possesses a sound knowledge of the language, is familiar with all periods of Italian literature and has developed the background and skills necessary to carry out scholarly research.

The regulations concerning the M.A. degree, as stated in the General Information section of the Graduate and Postdoctoral Studies Calendar, apply.

**M.A. in Italian (Thesis) (45 credits)**

**Required Courses (12 credits)**

ITAL 602 (3) The Literary Tradition
ITAL 610 (3) Bibliography of Italian Literature
ITAL 619 (3) Topics in Literary Theory, or a similar approved course in another department
ITAL 680 (3) Research Seminar

**Complementary Courses (9 credits)**

9 additional course-credits, chosen in consultation with an advisor from among the graduate courses offered by the Department. The three courses should cover three distinct chronological periods in Italian literature.

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

ITAL 698 (6) Thesis Proposal
ITAL 699 (18) Thesis

A maximum of 6 credits of graduate courses may be taken outside the Italian Studies Department, upon the advice of the Supervisor and with the permission of the Graduate Studies Director.

In exceptional cases, when program requirements cannot be fulfilled otherwise, students may take ITAL 606 Individual Reading Course 1 and ITAL 607 Individual Reading Course 2 offered as tutorials.

Typically, the first year program will consist of: Literary Theory course, ITAL 610, the three Complementary courses, and ITAL 688. The second year will include ITAL 602, ITAL 680 and the Thesis.

**M.A. in Italian (Non-Thesis) (45 credits)**

**Required Courses (12 credits)**

ITAL 602 (3) The Literary Tradition
ITAL 610 (3) Bibliography of Italian Literature
ITAL 619 (3) Topics in Literary Theory, or a similar approved course in another department
ITAL 680 (3) Research Seminar

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ITAL 606 INDIVIDUAL READING COURSE 1.
aspects of Italian literary history.

ITAL 607 INDIVIDUAL READING COURSE 2.

ITAL 690 RESEARCH PAPER 1.

ITAL 691 RESEARCH PAPER 2.

ITAL 680 RESEARCH SEMINAR.

ITAL 699 THESIS.

ITAL 701 COMPREHENSIVE EXAMINATION.

ITAL 780 STUDENT STAFF SEMINAR. (3)

43 Jewish Studies

Department of Jewish Studies
3438 McTavish Street, Room 202
Montreal, QC H3A 1X9
Canada

Telephone: 514-399-6543
Fax: 514-398-5158
Email: graduate.jewishst@mcgill.ca
Website: www.mcgill.ca/jewishstudies

Chair — Eric Caplan

43.1 Staff

Professors
David Aberbach; B.A.(Univ. Coll., Lon.), M.Litt., Ph.D.(Oxf.)
Gershon Hundert; B.A., M.A.(Ohio St.), Ph.D.(Col.) (Leenan Segal Professor of Jewish Studies) (joint appt. with History)
B. Barry Levy; B.A., B.R.E.(Yeshiva), Ph.D.(NYU)

Associate Professors
Eric Caplan; B.A.(McG.), M.A.(Tor.), Ph.D.(McG.) (joint appt. with Integrated Studies in Education)
Carlos Fraenkel; B.A., M.A., Ph.D.(F. U., Berlin) (joint appoint.with dept. of Philosophy)
Yael Halevi-Wise; B.A.(Hebrew), M.A.(G’town), Ph.D.(Prin.) (joint appt. with English)
Lawrence Kaplan; B.A.(Yeshiva), Ph.D.(Harv.)
Eugene Orenstein; B.A.(CCNY), M.A., Ph.D.(Col.)

Adjunct Professors
Magdelena Opalski; M.A.(Warsaw), Ph.D.(Ott.)
Ruth Wisser; M.A.(Col.), Ph.D.(McG.)

43.2 Programs Offered

M.A. in Jewish Studies. (An ad hoc Ph.D. is also available. Please contact the department for further information on this option.)

The Department of Jewish Studies welcomes students interested in deepening their knowledge of Jewish History and Jewish texts. We offer both a thesis and a non-thesis M.A. in Jewish Studies and in the History of the Jewish Interpretation of the Bible. Areas of study include Eastern European History, Jewish Thought, Modern Jewish Literature, and Hebrew Literature. These areas are broadly construed to accommodate the range of research interests in the Department.

While the thesis option is designed for students undertaking advanced research in one of the areas above, the non-thesis option offers a generalist degree in Jewish studies.

43.3 Admission Requirements

Ideally, applicants would have completed a B.A. Honours in Jewish Studies. If an applicant is otherwise deemed acceptable, it is possible to be admitted to a qualifying year. Students seeking admission to History of Jewish Interpretation of the Bible must demonstrate competence in Hebrew prior to beginning the program.

In addition to the appropriate references, transcripts, and examination scores, applicants should send samples of their academic work in their field of interest. Personal interviews are strongly recommended.

43.4 Application Procedures

Applications will be considered upon receipt of:
1. application form;
2. official transcripts;
3. Research Proposal/Study Plan;
4. curriculum vitae;
5. letters of reference;
6. $100 application fee;
7. GRE and TOEFL scores (if applicable);
8. samples of applicant’s academic work.

Dates for Guaranteed Consideration
For dates for guaranteed consideration, please consult the following website: www.mcgill.ca/gradapplicants/programs. Then select the appropriate program.

Note: We are not willing to consider any applications to be admitted for the Winter term.

Application inquiries should be addressed to the Graduate Coordinator, 514-398-6543. Email: graduate.jewishst@mcgill.ca.

McGill’s online application form for graduate program candidates is available at www.mcgill.ca/gradapplicants/apply.

43.5 Program Requirements

M.A. (Thesis) Degree
An M.A. in Jewish Studies (thesis option) is offered in the following areas: History of the Jewish Interpretation of the Bible, Eastern European History, Jewish Thought, Hebrew Literature, and Modern Jewish Literatures. These areas of specialization are broadly construed to accommodate the range of research interests in the Department. The M.A. can be completed in one year, though most students spend two years in the program. The focus is the thesis work (30 credits or 24 credits for students specializing in the History of the Jewish Interpretation of the Bible). In addition, 15 credits of coursework (at the 500 level or higher, including JWST 699: Research in Jewish Studies) will be chosen according to the student’s area of specialization in consultation with the student’s thesis advisor.

M.A. in Jewish Studies – Thesis (45 credits)

Required Courses (33 credits)
JWST 695 (9) M.A. Thesis 1
JWST 696 (9) M.A. Thesis 2
JWST 697 (12) M.A. Thesis 3
JWST 699 (3) Research in Jewish Studies

Complementary Courses (12 credits)
12 credits of courses at the 500 level or higher, chosen according to each student’s specialization in consultation with the student’s thesis advisor.

Language requirement:
Students choosing Eastern European studies, Jewish thought, or Hebrew literature must demonstrate fluency in either Hebrew or Yiddish according to their field of specialization. Mastery is normally determined by an examination administered by the Department.

M.A. in Jewish Studies – Thesis (45 credits)

History of the Jewish Interpretation of the Bible

Required Courses (33 credits)
JWST 510 (3) Jewish Bible Interpretation 1
JWST 511 (3) Jewish Bible Interpretation 2
JWST 690 (3) M.A. Thesis 1
JWST 691 (6) M.A. Thesis 2
JWST 692 (12) M.A. Thesis 3
JWST 694 (3) M.A. Thesis 4
JWST 699 (3) Research in Jewish Studies

Complementary Courses (12 credits)
12 credits of courses at the 500 level or higher, chosen in consultation with the student’s thesis advisor.

Language requirement:

In addition to Hebrew, students in the History of the Jewish Interpretation of the Bible stream must master another language in which primary documents in this field have been written; in most cases, this will be Aramaic, but classical Arabic and Greek are also accepted. Mastery is normally determined by an examination administered by the Department.

M.A. in Jewish Studies – Non-Thesis (45 credits)

All students pursuing this option must take JWST 699. The remaining credits will normally include 15 credits in two of the following areas and 12 credits in the third: Jewish Thought, Jewish History, and Jewish Literature. The substitution of credits in related disciplines outside of Jewish Studies may be permitted if appropriate. The coursework will be adjusted to the applicant’s academic background.

Required Course (3 credits)
JWST 699 (3) Research in Jewish Studies

Complementary Courses (42 credits)

Students will normally take 15 credits in two of the following areas and 12 credits in the third.

Jewish Thought (12 or 15 credits)
JWST 504 (3) Seminar in Jewish Thought
JWST 510 (3) Jewish Bible Interpretation 1
JWST 511 (3) Jewish Bible Interpretation 2
JWST 542 (3) Abraham Ibn Ezra as Parshan
JWST 543 (3) Maimonides as Parshan
JWST 544 (3) Nachmanides as Parshan
JWST 555 (3) The Bible in Jewish Philosophy
JWST 556 (3) Modern Parshanut 1
JWST 558 (3) Topics: Modern Jewish Thought
JWST 604 (3) Topics in Jewish Thought
JWST 661 (3) Study of a Biblical Character

Jewish History (12 or 15 credits)
JWST 585 (3) Tutorial: Eastern European Studies 1
JWST 586 (3) Tutorial: Eastern European Studies 2
JWST 602 (3) East European Jewish History 1
JWST 603 (3) East European Jewish History 2
HIST 655 (6) Tutorial
HIST 677D1 (3) Seminar: European Jewish History
HIST 677D2 (3) Seminar: European Jewish History

Jewish Literature (12 or 15 credits)
JWST 502 (3) Modern Israeli Literature
JWST 510 (3) Jewish Bible Interpretation 1
JWST 511 (3) Jewish Bible Interpretation 2
JWST 520 (3) Bible Interpretation in Antiquity
JWST 521 (3) Bible in the Dead Sea Scrolls
JWST 530 (3) Topics in Yiddish Literature
JWST 531 (3) Topics in Yiddish Literature
JWST 532 (3) Narrative Midrash
JWST 533 (3) Halakhic Midrash
JWST 534 (3) Homiletic Midrash
JWST 535 (3) Exegetical Midrash
JWST 536 (3) Readings: Aramaic Bible Translation
JWST 537 (3) The Bible in the Talmud Bavli
JWST 538 (3) Early Rabbinic Parshanut 1
JWST 541 (3) Medieval Ashkenazi Parshanut
JWST 546 (3) Innovative Medieval Parshanut
JWST 547 (3) Mystical Biblical Interpretation
JWST 548 (3) Medieval Parshanut
JWST 550 (3) The Bible in Hebrew Literature
JWST 551 (3) 20th Century Parshanut
JWST 554 (3) Modern Jewish Biblical Scholarship
JWST 555 (3) The Bible in Jewish Philosophy
JWST 556 (3) Modern Parshanut 1
JWST 571 (3) Biblical Literature
JWST 572 (3) Aggadah in Modern Scholarship
JWST 573 (3) History of Hebrew Bible Text
JWST 574 (3) Bible in Responsa Literature
JWST 575 (3) Topics in Parshanut
JWST 581 (3) Aramaic Language
JWST 582 (3) Hebrew and Aramaic Philology
JWST 587 (3) Tutorial in Yiddish Literature
JWST 588 (3) Tutorial in Yiddish Literature
JWST 615 (3) Literary Analysis of Hebrew Fiction

43.6 Courses

Students preparing to register should consult Class Schedule on the web at www.mcgill.ca/student-records/register/class-schedule for the most up-to-date list of courses available; courses may have been added, rescheduled or cancelled after this Calendar was published. Class Schedule lists courses by term and includes days, times, locations, and names of instructors.

Note: All undergraduate courses administered by the Faculty of Arts (courses at the 100 to 500 level) have limited enrolment.

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

JWST 502 Modern Israeli Literature. (3) (Prerequisite: JWST 340 or permission of instructor) (Knowledge of Hebrew required) A review of the mastertexts of Israeli literature from the modern period.

JWST 504 Seminar in Jewish Thought. (3) (Note: Readings in English) Examination of a theme or philosopher in the history of Jewish thought with particular attention to the intersections between Jewish thought and other intellectual traditions (e.g., Greek, Islamic, Christian, etc.)

JWST 510 Jewish Bible Interpretation 1. (3) (Restriction: Not open to students who have taken JWST 512) The issues, approaches, and texts of Jewish Bible interpretation between the Biblical and talmudic eras: Bible interpretation in the Bible; in Greco-Roman Jewish literature; in the Mishnah, Tosefta, Targumim, and Talmudim; early Samaritan interpretation, Bible interpretation in ancient synagogue art, and in the massoretic literature.

JWST 511 Jewish Bible Interpretation 2. (3) (Restriction: Not open to students who have taken JWST 512) The issues, problems, approaches, and texts of Jewish Bible interpretation in medieval, renaissance, early modern, and modern times. Interpretation in the Geonic, Ashkenazi, Sefardic, North African, Italian, European, Yemenite, North American and Israeli centres of Jewish Learning.

JWST 523 Ancient Bible Interpretation. (3) Advanced level work in one aspect of Jewish Bible interpretation in ancient times.

JWST 530 Topics in Yiddish Literature. (3) Supervised research in Yiddish literature. Work will focus on one genre, literary school or author.

JWST 531 Topics in Yiddish Literature. (3) Supervised research in Yiddish literature. Work will focus on one genre, literary school or author.

JWST 536 Readings: Aramaic Bible Translation. (3)

JWST 539 Biblical Interpretation 1. (3) Close readings in one or more texts of early rabbinic Bible interpretation: Mishnah, Tosefta, Halakhic and Aggadic Midrashim, Talmud.

JWST 548 Medieval Parshanut. (3) Advanced level work in one aspect of Jewish Bible interpretation in medieval times.

JWST 551 20th Century Parshanut. (3)

JWST 552 Judaism and Poverty. (3) (Prerequisite: One course in Jewish Studies, Sociology or Social Work.) An introduction to the subject of poverty in Jewish literature and its influence on religions such as Christianity and Islam, and on modern, secular ideologies, especially socialism, and creative literature.

JWST 555 Topics: Modern Jewish Thought. (3)

JWST 562 Medieval Islamic and Jewish Philosophy. (3) (Prerequisite: one course in Greek, Islamic or Jewish Philosophy, or permission of instructor.) Deals with the manifold points of contact between medieval Muslim and Jewish intellectual history. Muslim and Jewish philosophers, theologians and mystics belonged to the same currents of thought, used the same language and studied the same sources in translation, proposing similar answers to questions that arose in the context of their respective religious traditions.

JWST 575 Topics in Parshanut. (3) Advanced level work in one aspect of Jewish Bible Interpretation that cuts across all periods of Jewish Bible interpretation.

JWST 581 Aramaic Language. (3) (Requires Departmental approval) (Restriction: Not open to students who have taken JWST 506)

JWST 585 Tutorial: Eastern European Studies 1. (3)

JWST 586 Tutorial: Eastern European Studies 2. (3)

JWST 587 Tutorial in Yiddish Literature. (3)

JWST 588 Tutorial in Yiddish Literature. (3)

JWST 589 Tutorial in Jewish Literature. (3) Supervised research in Modern Jewish history.

JWST 590 Tutorial in Jewish Literature. (3) Supervised research in Modern Jewish history.

JWST 602 East European Jewish History 1. (3) (1500 - 1800) Studies on specific issues and problems related to the social and cultural history of the Jews in Eastern Europe.

JWST 603 East European Jewish History 2. (3) (1500 - 1800) Studies on specific issues and problems related to the social and cultural history of the Jews in Eastern Europe.

JWST 604 Topics: In Jewish Thought. (3) Tutorial in Jewish thought.

JWST 615 Literary Analysis of Hebrew Fiction. (3) (Note: Readings in English) A methodological examination of contemporary Hebrew narratives with particular attention to literary structures and narrative form.

JWST 690 M.A. Thesis 1. (3) Normally done during the first semester of residence, this project entails original bibliographic research related to the history of Jewish Bible interpretation, usually the preparation of an extensive bibliography of one writer, text or theme. The choice may relate to the thesis topic.

JWST 690D1 (1.5), JWST 690D2 (1.5) M.A. Thesis 1. (Students must register for both JWST 690D1 and JWST 690D2) (No credit will be given for this course unless both JWST 690D1 and JWST 690D2 are successfully completed in consecutive terms) (JWST 690D1 and JWST 690D2 are equivalent to JWST 690D1 and JWST 690D2 together are equivalent to JWST 690D1). Normally done during the first semester of residence, this project entails original bibliographic research related to the history of Jewish Bible interpretation, usually the preparation of an extensive bibliography of one writer, text or theme. The choice may relate to the thesis topic.

JWST 690N1 M.A. Thesis 1. (1.5) (Students must also register for JWST 690N2) (No credit will be given for this course unless both JWST 690N1 and JWST 690N2 are successfully completed in a twelve month period) (JWST 690N1 and JWST 690N2 together are equivalent to JWST 690N1 and JWST 690N2 together are equivalent to JWST 690). Normally done during the first semester of residence, this project entails original bibliographic research related to the history of Jewish Bible interpretation, usually the preparation of an extensive bibliography of one writer, text or theme. The choice may relate to the thesis topic.

JWST 690N2 M.A. Thesis 1. (1.5) (Prerequisite: JWST 690N1) (No credit will be given for this course unless both JWST 690N1 and JWST 690N2 are successfully completed in a twelve month period) (JWST 690N1 and JWST 690N2 together are equivalent to JWST 690) See JWST 690N1 for course description.

JWST 691 M.A. Thesis 2. (6) A study of the history of Jewish interpretation of one verse, based on 100 primary sources of a topical analysis of a major issue in the history of Jewish Bible interpretation.

44 Kinesiology and Physical Education

Department of Kinesiology and Physical Education  
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Telephone: 514-398-4184  
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Email: kin.physed@mcgill.ca  
Website: www.mcgill.ca/edu-kpe

Chair — Dr. Ted Milner  
Graduate Program Director — Dr. René A. Turcotte  
Telephone: 514-398-4184 ext. 0488

44.1 Staff

Professors  
Ross E. Andersen; B.Ed., M.A.(McG.), Ph.D.(Temple)  
Greg Reid; B.Ed.(P.E.),(McG.), M.S.(Calif.), Ph.D.(Penn St.)  
Theodore E. Milner; B.Sc., M.Sc., Ph.D.(Alta.)

Associate Professors  
Gordon Bloom; B.Ed.(W. Ont.), M.A.(York (Can.)), Ph.D.(Ott.)  
David J. Pearse; B.A., B.PHE., M.Sc., Ph.D.(Qu.)  
René A. Turcotte; H.B.P.H.E. (Lauren.), M.Sc., Ph.D.(Alta.)

Assistant Professors  
Julie Côté; B.Sc., M.Sc.(Wis.-Madison), Ph.D.(Montr.)  
William Harvey; B.Ed., M.A., Ph.D.(McG.)  
Catherine Sabiston; B.Sc.K.(Dal.), M.H.K. (Windsor), Ph.D.(Br. Col.)  
Paul Stapley; B.A. (Leeds), M.Sc.(Northumbria), Ph.D.(Bourgogne)  
Tanja Taivassalo; B.Sc., Ph.D.(MCG.)  
Enrique Garcia; BPE, INEF(Madrid), M.Sc.(Laval), Ph.D.(Alta.)  
Dilson Rassier; BPE, M.Sc.(Brazil), Ph.D.(Calg.)

Adjunct Professors  
Bernard Aguilaniu, Robert Boushel, Isabelle Cossette, Christian Duval

44.2 Programs Offered

The Department of Kinesiology and Physical Education Department offers thesis and non-thesis options leading to an M.A. or an M.Sc. in Kinesiology and Physical Education. Graduate program of studies in the areas of Adapted Physical Activity, Pedagogy and Sport and Exercise Psychology lead to an M.A. while graduate program of studies in the areas of Biomechanics, Exercise Physiology and Motor Control and Learning lead to an M.Sc.

The M.A. or M.Sc. with thesis route provides the opportunity to acquire critical skills and knowledge related to systematic research in an area of specialization.

The M.A. or M.Sc. non-thesis route provides the opportunity for those interested in professional practice to acquire advanced knowledge in an area of specialization as well as some breadth.

Prospective applicants to the Ph.D. (Ad Hoc) program should contact the Department at 514-398-4184.

Research conducted in the Department of Kinesiology and Physical Education focuses in the areas of adapted physical activity, biomechanics, exercise physiology, motor control, and learning and sport and exercise psychology. Research laboratories are located in the department's Seagram Sport Science Centre as well as in the satellite facilities located at the Occupational Biomechanics and Posture-Movement Control Lab of the Jewish Rehabilitation Hospital, the Research Clinical Exercise Physiology Lab of the McGill University Health Centre (MUHC), Douglas Mental Health University, Ste-Justine Hospital, the Ville Marie Medical and Women's Health Centre and the Montreal Neurological Institute. Other affiliated research centres include Summit School and the Mackay Centre.

44.3 Admission Requirements

1. An undergraduate degree in Physical and Health Education, Exercise Science, Kinesiology, or its equivalent is required.
2. A minimum academic standing equivalent to a CGPA of 3.0 out of 4.0.

44.4 Application Procedure

McGill’s online application form is available to all graduate program candidates at www.mcgill.ca/gradapplicants/apply.

Applications will be considered upon receipt of:

1. application form;  
2. official transcripts from previous undergraduate/graduate programs of study;  
3. two letters of reference;  
4. $100 application fee;  
5. TOEFL score (where applicable).

Dates for Guaranteed Consideration

For dates for guaranteed consideration, please consult the following website: www.mcgill.ca/gradapplicants/programs. Then select the appropriate program.

All documentation is to be submitted directly to the Graduate Program Director in the Department of Kinesiology and Physical Education.
44.5 Program Requirements

M.A. Kinesiology and Physical Education (Thesis Option) (45 credits)
Areas: Adapted Physical Activity, Pedagogy, and Sport and Exercise Psychology

Required Courses (6 credits)
- EDKP 605 (3) Research Methods 1
- EDKP 617 (0) Seminar in Kinesiology and Physical Education 1
- EDKP 618 (0) Seminar in Kinesiology and Physical Education 2
- EDKP 619 (0) Seminar in Kinesiology and Physical Education 3
- EDKP 620 (0) Seminar in Kinesiology and Physical Education 4
- EDPE 676 (3) Intermediate Statistics 2 or equivalent

Complementary Courses (15 credits)
Students must take a minimum of 9 credits of coursework in a classroom setting in the area of concentration selected in consultation with the graduate student advisor.
- EDKP 504 (3) Health and Lifestyle Education
- EDKP 603 (6) Individual Reading Course 1
- EDKP 607 (3) Curriculum Innovation and Change
- EDKP 616 (3) Individual Reading Course 2
- EDKP 648 (3) Physical Activity Psychology
- EDKP 650 (3) Research in Physical Education Pedagogy
- EDKP 654 (3) Sport Psychology
- EDKP 655 (3) Inclusive Physical Activity
- EDKP 664 (3) Motor Learning
- EDKP 665 (3) Motor Behaviour and Disability
- EDKP 671 (3) Experimental Problems
- EDKP 672 (6) Experimental Problems

Elective Courses (12 credits)
12 credits (normally four courses) chosen in consultation with an advisor (should be 500 level or higher).
- EDKP 691 (6) Thesis Research 1
- EDKP 692 (3) Thesis Research 2
- EDKP 693 (3) Thesis Research 3
- EDKP 694 (3) Thesis Research 4

Thesis Component – Required (24 credits)
- EDKP 691 (6) Thesis Research 1
- EDKP 692 (3) Thesis Research 2
- EDKP 693 (3) Thesis Research 3
- EDKP 694 (3) Thesis Research 4

M.A. Kinesiology and Physical Education (Non-Thesis) (45 credits)
Areas: Adapted Physical Activity, Pedagogy, and Sport and Exercise Psychology

Required Courses (0 credits)
- EDKP 617 (0) Seminar in Kinesiology and Physical Education 1
- EDKP 619 (0) Seminar in Kinesiology and Physical Education 2
- EDKP 620 (0) Seminar in Kinesiology and Physical Education 4

Complementary Courses (18 credits)
6 credits, two courses from the following list:
- EDKP 605 (3) Research Methods 1
- EDPE 575 (3) Educational Measurement
- EDSL 630 (3) Qualitative/Ethnographic Methods
- or EDEM 692 (3) Qualitative Research Methods
12 credits selected from the following list:
- EDKP 504 (3) Health and Lifestyle Education
- EDKP 603 (6) Individual Reading Course 1
- EDKP 607 (3) Curriculum Innovation and Change
- EDKP 616 (3) Individual Reading Course 2
- EDKP 648 (3) Physical Activity Psychology
- EDKP 650 (3) Research in Physical Education Pedagogy
- EDKP 654 (3) Sport Psychology
- EDKP 655 (3) Inclusive Physical Activity
- EDKP 664 (3) Motor Learning
- EDKP 665 (3) Motor Behaviour and Disability
- EDKP 671 (3) Experimental Problems
- EDKP 672 (6) Experimental Problems

M.Sc. Kinesiology and Physical Education (Thesis Option) (45 credits)
Areas: Biomechanics, Exercise Physiology, and Motor Control and Learning

Required Courses (6 credits)
- EDKP 605 (3) Research Methods 1
- EDKP 676 (3) Intermediate Statistics 2 or equivalent
- EDKP 617 (0) Seminar in Kinesiology and Physical Education 1
- EDKP 618 (0) Seminar in Kinesiology and Physical Education 2
- EDKP 619 (0) Seminar in Kinesiology and Physical Education 3
- EDKP 620 (0) Seminar in Kinesiology and Physical Education 4

Elective Courses (15 credits)
Students may also take courses from the Faculty of Science, the Faculty of Arts in consultation with an advisor (500 level or higher).
- EDKP 691 (6) Thesis Research 1
- EDKP 692 (3) Thesis Research 2
- EDKP 693 (3) Thesis Research 3
- EDKP 694 (3) Thesis Research 4

Complementary Courses (15 credits)
Students must take a minimum of 9 credits of coursework in a classroom setting in the area of concentration selected in consultation with the graduate student advisor.
- EDKP 542 (3) Environmental Exercise Physiology
- EDKP 553 (3) Physical Activity Assessments
- EDKP 566 (3) Muscle Mechanics
- EDKP 603 (6) Individual Reading Course 1
- EDKP 616 (3) Individual Reading Course 2
- EDKP 630 (3) Human Walking Mechanics
- EDKP 635 (3) Modeling Human Movement
- EDKP 640 (3) Advanced Ergonomics
- EDKP 652 (3) Cardio - Respiratory Exercise Physiology
- EDKP 662 (3) Nerve/Muscle Exercise Response
- EDKP 663 (3) Applied Exercise Physiology
- EDKP 676 (3) Sport Science – Seminar
- EDKP 671 (3) Experimental Problems
- EDKP 672 (6) Experimental Problems
- EDKP 695 (3) Thesis Research 5
- EDKP 696 (3) Thesis Research 6

Thesis Component – Required (24 credits)
Students must take a minimum of 9 credits of coursework in a classroom setting in the area of concentration selected in consultation with the advisor (500 level or higher).
- EDKP 691 (6) Thesis Research 1
- EDKP 692 (6) Thesis Research 2
- EDKP 693 (6) Thesis Research 3
- EDKP 694 (6) Thesis Research 4

M.Sc. Kinesiology and Physical Education (Non-Thesis) (45 credits)
Areas: Biomechanics, Exercise Physiology, and Motor Control and Learning
Required Courses (0 credits)
EDKP 617 (0) Seminar in Kinesiology and Physical Education 1
EDKP 618 (0) Seminar in Kinesiology and Physical Education 2
EDKP 619 (0) Seminar in Kinesiology and Physical Education 3
EDKP 620 (0) Seminar in Kinesiology and Physical Education 4

Complementary Courses (18 credits)
6 credits, two courses from the following list:
EDPE 575 (3) Educational Measurement
EDKP 605 (3) Research Methods
EDSL 630 (3) Qualitative/Ethnographic Methods
or EDEM 692 (3) Qualitative Research Methods

12 credits chosen from the following:
EDKP 640 (3) Advanced Ergonomics
EDKP 652 (3) Cardio - Respiratory Exercise Physiology
EDKP 662 (3) Nerve/Muscle Exercise Response
EDKP 663 (3) Applied Exercise Physiology
EDKP 667 (3) Sport Science – Seminar
EDKP 668 (3) Experimental Problems
EDKP 672 (6) Experimental Problems

Students may also take courses from the Faculty of Science in consultation with advisor.

Elective Courses (12 credits)
12 credits (normally four courses) chosen in consultation with an advisor (should be 500 level or higher).

Project Component – Required (15 credits)
EDKP 608 (15) Special Project

44.6 Courses (EDKP)

Students preparing to register should consult Class Schedule on the web at www.mcgill.ca/student-records/register/class-schedule for the most up-to-date list of courses available; courses may have been added, rescheduled or cancelled after this Calendar was published. Class Schedule lists courses by term and includes days, times, locations, and names of instructors.

Single term and Multi-term Courses (D1/D2, N1/N2, J1/J2/J3)
The same course may be available as a single term offering and also as a multi-term offering. The course content and credit weight is equivalent in all modes; the only difference being the scheduling.

Courses with numbers ending in D1 and D2 are taught in two consecutive terms (most commonly Fall and Winter). Students must register for the same section of both the D1 and D2 components. When registering for a Fall term D1 course the student will automatically be registered for the Winter term D2 portion. No credit will be given unless both components (D1 and D2) are successfully completed in consecutive terms, e.g., Fall 2009 and Winter 2010.

Courses with numbers ending in N1 and N2 are taught in two non-consecutive terms (Winter and Fall). Students must register for the same section of both the N1 and N2 components. No credit will be given unless both components (N1 and N2) are successfully completed within a twelve (12) month period.

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

Descriptions of courses not scheduled in 2009-10 can usually be found in the preceding Calendar.

For more information on Multi-term Courses, Course Terminology, Class Schedule and Course Catalog, see the General Information, Regulations and Research Guidelines, Graduate and Postdoctoral Studies Calendar for 2009-10.

EDKP 504 HEALTH & LIFESTYLE EDUCATION. (3) This course will focus on content development and implementation of Health and Lifestyle concepts within the elementary and secondary physical education curriculum. Emphasis through lectures and labs will allow students' participation and experimentation of activities that could be taught in classroom and/or physical education settings.

EDKP 542 ENVIRONMENTAL EXERCISE PHYSIOLOGY. (3) (Prerequisite: EDKP 395.) Environmental Exercise Physiology will examine human physiological responses to acute and chronic exercise in the following environments: thermal stress (hot and cold), hypobaric (medium and high altitude), hyperbaric (diving and chambers), and microgravity.

EDKP 566 ADVANCED BIOMECHANICS THEORY. (3) (Prerequisite(s): EDKP 205 and 206) Examination of biomechanical applications in various contexts such as clinical, ergonomic, sport, aging, comparative, robotics.

EDKP 603 INDIVIDUAL READING COURSE 1. (6)
EDKP 603D1 (3), EDKP 603D2 (3) INDIVIDUAL READING COURSE 1. (Students must register for both EDKP 603D1 and EDKP 603D2) (No credit will be given for this course unless both EDKP 603D1 and EDKP 603D2 are successfully completed in consecutive terms) (EDKP 603D1 and EDKP 603D2 together are equivalent to EDKP 603)

EDKP 605 RESEARCH METHODS 1. (3) The course will examine the nomenclature, structure, methods and areas of quantitative and qualitative research in Physical Education. Students will be required to evaluate research concepts and examine their relationship to statistical design. Activities will focus on data retrieval, research problems, proposals, data collection and report of findings.

EDKP 607 CURRICULUM INNOVATION AND CHANGE. (3) This course examines recent Physical Education curriculum innovations at elementary, secondary and collegiate levels of physical education and how they have been implemented in various settings. It involves study of philosophical, societal and institutional changes on program emphasis and gives particular attention to how teachers may implement curriculum changes.

EDKP 608 SPECIAL PROJECT. (15) The development of a substantive written document which depicts an investigation or application of a physical education problem, issue or innovative practice. The monograph is to be presented to the candidate's advisor after satisfactory completion of the required course work.

EDKP 616 INDIVIDUAL READING COURSE 2. (3) Reading Course.

EDKP 617 SEMINAR IN KINESIOLOGY AND PHYSICAL EDUCATION 1. (0) Seminar course given by students and invited speakers covering different areas of research related to kinesiology and physical education.

EDKP 618 SEMINAR IN KINESIOLOGY AND PHYSICAL EDUCATION 2. (0) Seminar course given by students and invited speakers covering different areas of research related to kinesiology and physical education.

EDKP 619 SEMINAR IN KINESIOLOGY AND PHYSICAL EDUCATION 3. (0) Seminar course given by students and invited speakers covering different areas of research related to kinesiology and physical education.

EDKP 620 SEMINAR IN KINESIOLOGY AND PHYSICAL EDUCATION 4. (0) Seminar course given by students and invited speakers covering different areas of research related to kinesiology and physical education.
EDKP 630 HUMAN WALKING MECHANICS. (3) (Prerequisite: EDKP 206 or permission of instructor.) Kinematics, kinetics, and neural control of walking and running under normal and perturbed conditions. Comparison of locomotion strategies for different populations (e.g., adolescents, elderly, amputees, etc.) will be emphasized. Various measurement techniques, data processing, and evaluations of total body and limb coordination will be addressed.

EDKP 635 MODELLING HUMAN MOVEMENT. (3) (Prerequisite: EDKP 206 or permission of instructor.) Computational techniques and methodologies necessary for theoretical calculation of modelling the physical dynamic behaviour of the human body and tissues.

EDKP 640 ADVANCED ERGONOMICS. (3) Biomechanical aspects of some common motion disorders associated with the workplace. Recent knowledge in this area will be used to gain a better understanding and develop problem-solving skills related to issues such as risk factors, activity status, injury mechanisms, movement compensation, and work adaptation strategies.

EDKP 648 PHYSICAL ACTIVITY PSYCHOLOGY. (3) An examination of the psychological and social psychological factors influencing physical activity behaviours. Emphasis is placed on understanding the theoretical constructs and research underlying involvement in physical activity including the introduction of salient measurement issues.

EDKP 650 RESEARCH IN PHYSICAL EDUCATION PEDAGOGY. (3) Theoretical foundation on research in physical education teaching, teacher preparation, and curriculum, including current literature to assess the scope of research designs used in the field and practical applications of the research.

EDKP 652 CARDIO-RESPIRATORY EXERCISE PHYSIOLOGY. (3) A comprehensive review of the basic physiological responses of the circulatory and respiratory systems to acute and chronic exercise and a brief discussion of regulatory mechanisms.

EDKP 654 SPORT PSYCHOLOGY. (3) The psychological factors and personality characteristics that influence diverse aspects of sport and physical activity. Seminars focus on discussions/presentations of theory, psychometrics and application of psychological principles to behaviour in sport.

EDKP 655 INCLUSIVE PHYSICAL ACTIVITY. (3) Physical activity program development for individuals with a disability, primarily from an inclusive self-determined perspective, including contemporary assessment, instructional methods, best educational practices, and existing curricular models for selected developmental disabilities.

EDKP 662 NERVE/MUSCLE EXERCISE RESPONSE. (3) Acute and chronic adaptations of the neuromuscular system to exercise, current concepts and understanding of neuromuscular morphology, motor unit recruitment, the etiology of neuromuscular fatigue, and mechanisms of neuromuscular adaptation.

EDKP 664 MOTOR LEARNING. (3) The analysis of conditions and factors related to human learning and performance or behavioural potential using the information processing model of behaviour. Seminar format is used to discuss experimentation and theory that examine motor skill acquisition.

EDKP 665 MOTOR BEHAVIOUR AND DISABILITY. (3) Factors that influence the motor behaviour of individuals with a disability, including anthropometric characteristics, information processing, knowledge and self-regulation, motivation, and the social-cultural context. Cognitive and dynamic systems perspectives will be emphasized as well as developmental disabilities such as autism, intellectual disability, developmental coordination disorder, and ADHD.

EDKP 671 EXPERIMENTAL PROBLEMS. (3) Study in one area of: ergo-physiology or biomechanics or psychology of motor performance or motor performance for exceptional children. To provide an opportunity to conduct a research project and develop an awareness of the problems involved in the area of concentration under departmental supervision.

EDKP 672 EXPERIMENTAL PROBLEMS. (6) See EDKP 671. This course, however, is more intensive and comprehensive in nature.

EDKP 672D1 (3), EDKP 672D2 (3) EXPERIMENTAL PROBLEMS. (Students must register for both EDKP 672D1 and EDKP 672D2) (No credit will be given for this course unless both EDKP 672D1 and EDKP 672D2 are successfully completed in consecutive terms) (EDKP 672D1 and EDKP 672D2 together are equivalent to EDKP 672) See EDKP 671. This course, however, is more intensive and comprehensive in nature.

EDKP 691 THESIS RESEARCH 1. (6) A comprehensive literature review in the general area of the thesis topic. Independent work under the supervision of the thesis advisor(s).

EDKP 691D1 (3), EDKP 691D2 (3) THESIS RESEARCH 1. (Students must register for both EDKP 691D1 and EDKP 691D2) (No credit will be given for this course unless both EDKP 691D1 and EDKP 691D2 are successfully completed in consecutive terms) (EDKP 691D1 and EDKP 691D2 together are equivalent to EDKP 691) A comprehensive literature review in the general area of the thesis topic. Independent work under the supervision of the thesis advisor(s).

EDKP 692 THESIS RESEARCH 2. (6) Independent work under the supervision of the thesis advisor(s) culminating with a written proposal and oral seminar explaining the direction of the thesis research.

EDKP 692D1 (3), EDKP 692D2 (3) THESIS RESEARCH 2. (Students must register for both EDKP 692D1 and EDKP 692D2) (No credit will be given for this course unless both EDKP 692D1 and EDKP 692D2 are successfully completed in consecutive terms) (EDKP 692D1 and EDKP 692D2 together are equivalent to EDKP 692) Independent work under the supervision of the thesis advisor(s) culminating with a written proposal and oral seminar explaining the direction of the thesis research.

EDKP 693 THESIS RESEARCH 3. (6) Ongoing research pertaining to the thesis under the direction of the thesis advisor(s).

EDKP 693D1 (3), EDKP 693D2 (3) THESIS RESEARCH 3. (Students must register for both EDKP 693D1 and EDKP 693D2) (No credit will be given for this course unless both EDKP 693D1 and EDKP 693D2 are successfully completed in consecutive terms) (EDKP 693D1 and EDKP 693D2 together are equivalent to EDKP 693) Ongoing research pertaining to the thesis under the direction of the thesis advisor(s).

EDKP 694 THESIS RESEARCH 4. (6) Independent work under the supervision of the thesis advisor(s). Final submission and approval of the thesis.

EDKP 694D1 (3), EDKP 694D2 (3) THESIS RESEARCH 4. (Students must register for both EDKP 694D1 and EDKP 694D2) (No credit will be given for this course unless both EDKP 694D1 and EDKP 694D2 are successfully completed in consecutive terms) (EDKP 694D1 and EDKP 694D2 together are equivalent to EDKP 694) Independent work under the supervision of the thesis advisor(s). Final submission and approval of the thesis.

EDKP 695 THESIS RESEARCH 5. (3) Independent work under the supervision of the thesis advisor(s) leading to the finalization of procedures for data collection.

EDKP 696 THESIS RESEARCH 6. (3) Independent work under the supervision of the thesis advisor(s) leading to the finalization of procedures for data collection.
45 Law

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Website: www.mcgill.ca/law

Dean, Faculty of Law — Nicholas Kaser
Associate Dean (Graduate Studies) — Shauna Van Praagh

45.1 Staff

45.1.1 Directors of Institutes

Institute of Air and Space Law
Paul S. Dempsey; A.B., J.D.(Georgia), LL.M.(George Washington), D.C.L.(McG.) Director

Institute of Comparative Law
Angela Campbell; B.A., B.C.L., LL.B.(McG.), LL.M.(Harv.) Director

45.1.2 Directors of Research Centres

Centre for Human Rights and Legal Pluralism
René Provost; LL.B.(Montr.), LL.M.(Calif., Berk.), D.Phil.(Oxf.) Director

Colleen Sheppard; B.A., LL.B.(Tor.), LL.M.(Harv.) Research Director

Centre for Intellectual Property Policy
Wendy Adams; B.A.(Laur.), LL.B.(Tor.), LL.M.(Mich.) Director

Centre for Medicine, Ethics and Law
Margaret A. Somerville; A.M., F.R.C.S., A.u.A.(Pharm.)(Adel.), LL.B.(Syd.), D.C.L.(McG.), LL.D. Hon. Causa(Windsor, Macquarie, St. FX.) (Samuel Gage Professor of Law) Acting Director

Centre for Private and Comparative Law
Lionel Smith; B.Sc.(Tor.), LL.B.(W. Ont.), LL.M.(Camb.), D.Phil.(Oxf.), LL.B.(Montr.) (James McGill Professor) Director

Centre for Research in Air and Space Law
Paul S. Dempsey; A.B., J.D.(Georgia), LL.M.(George Washington), D.C.L.(McG.) Director

45.1.3 Teaching Faculty

Wendy Adams; B.A.(Laur.), LL.B.(Tor.), LL.M.(Mich.)
Payam Akhavan; LL.B.(York (Can.)), LL.M., S.J.D.(Harv.)
Kirsten Anker; B.Sc., LL.B., Ph.D.(Syd.)
Mark Antaki; B.C.L., LL.B.(McG.), M.A., Ph.D.(Calif.)
Frédéric Bachand; LL.B.(Montr.), LL.M.(Camb.), LL.D.(Montr.), Docteur en droit(Paris II)
Jean-Guy Belle; LL.B., LL.M.(Laval), Docteur en sociologie juridique(Paris II) (Sir William C. Macdonald Professor of Law)
Adelle Blackett; B.A.(Qu.), LL.B., B.C.L.(McG.), LL.M., J.S.D.(Col.) (William Dawson Scholar)
Kimberley Brooks; B.A.(Tor.), LL.B.(Br. Col.), LL.M.(York (Can.))
Angela Campbell; B.A., B.C.L., LL.B.(McG.), LL.M.(Harv.)
Irwin Cotler; O.C., B.A., B.C.L.(McG.), LL.M.(Yale), Ph.D.(Hebrew), LL.D. Hon. Causa(Bar-Ilan, York, S. Fraser, Haifa) (on leave)

Françcois Crépeau; B.C.L., LL.B.(McG.), Maître en droit privé(Bordeaux), D.E.A.(Paris) (Hans and Tamar Oppenheimer Chair in Public International Law)
Armand de Mestral; O.C., A.B.(Harv.), B.C.L.(McG.), LL.M.(Harv.), Docteur Hon. Causa(U. Lyon III, Kwansei Gakuin Univ.) (on leave)
Helge Dedek; LL.M(Harv.), Dr. Iuris(Bonn)
Paul S. Dempsey; A.B., J.D.(Georgia), LL.M.(George Washington), D.C.L.(McG.) (Tomlinson Professor of Global Governance)
Jaye Ellis; B.A.(Calg.), LL.B., B.C.L.(McG.), LL.M.(Br. Col.), D.C.L.(McG)
Yaëll Emerich; B.C.L.(Paris), Docteur en droit(Montr.), Docteur en droit(Jean Moulin, Lyon III)
William F. Foster; LL.B.(Hons.)(Auck.), LL.M.(Br. Col.) (Sir William C. Macdonald Professor of Law) (on leave)
Eve Fox-Decent; B.A., M.A.(Montr.), J.D., Ph.D.(Tor.)
Fabien Gélinas; LL.B., LL.M.(Montr.), D.Phil(Oxf.)
H. Patrick Glenn; B.A.(Br. Col.), LL.B.(Qu.), LL.M.(Harv.), D.E.S., Docteur en droit(Stras.), LL.D. Hon. Causa(Fribourg), F.R.S.C. (Peter M. Lang Professor of Law)
Jane Matthews Glenn; B.A.(Hons.), LL.B.(Qu.), Docteur de l’Université de Strasbourg(Droit) (Emeritus Professor)
Richard Gold; B.Sc.(McG.), LL.B.(Hons)(Tor.), LL.M., S.J.D.(Mich.)
Ram Jaku; B.A., LL.B., LL.M.(Panjab), LL.M., D.C.L.(Mcg.) (on leave)
Richard A. Janda; B.A.(Tor.), LL.B., B.C.L.(McG.), LL.M.(Col.)
Pierre-Gabriel Jobin; B.A., B.Phil., LL.L.(Laval), D.E.S. en droit privé, Doctorat d’état en droit privé(Montpellier) (Emeritus Professor)
Rosalie Jukier; B.C.L., LL.B.(McG.), B.C.L.(Oxf.)
Daniel Jutras; LL.B.(Montr.), LL.M.(Harv.) (on leave)
Nicholas Kaser; B.A.(Tor.), LL.B., LL.B.(McG.), D.E.A.(Paris), F.R.S.C. (James McGill Professor)
Lara Khoury; LL.B.(Sher.), B.C.L., D.Phil.(Oxf.)
Alana Klein; B.A.(C’dia), B.C.L., LL.B.(McG.)
Dennis R. Klinck; B.A., M.A.(Alta.), Ph.D.(Lon.), LL.B.(Sask.)
David Lametti; B.A.(Tor.), LL.B., B.C.L.(McG.), LL.M(Yale), D.Phil.(Oxf.)
Robert Leckey; B.A.(Qu.), B.C.L., LL.B.(McG.), S.J.D.(Tor.)
Roderick A. Macdonald; B.A., LL.B.(York (Can.)), LL.L.(Ott.), LL.M.(Tor.), F.R.S.C. (F.R. Scott Professor of Public and Constitutional Law)
Desmond Manderson; B.A.(Hons.), LL.B.(Hons.) (A.N.U.), D.C.L.(McG.) (Canada Research Chair in Law and Discourse)
Frédéric Mégret; LL.B.(King’s College), D.E.A.(Paris), Ph.D.(Geneva/Paris) (Canada Research Chair on the Law of Human Rights and Legal Pluralism)
Pierre-Emmanuel Moyse; LL.B., LL.M., LL.D.(Montr.)
Victor Muñiz-Fraticelli; B.A.(C’nell), J.D.(Puerto Rico), M.A.(Chic.) (joint appt. with Political Science)
Vrinda Nairan; LL.B.(Delphi), LL.M., D.C.L.(McG.)
Tina Piper; B.A.Sc.(Tor.), LL.B. (Dal.), B.C.L., M.Phil., D.Phil.(Oxf.)
René Provost; LL.B.(Montr.), LL.M.(Calif., Berk.), D.Phil.(Oxf.)
Geneviève Saumier; B.Com., B.C.L., LL.B.(McG.), Ph.D.(Camb.)
Stephen A. Smith; B.A., B.C.L.(McG.), D.Phil.(Oxf.) (Emeritus Professor)
Colleen Sheppard; B.A., LL.B.(Tor.), LL.M.(Harv.) (on leave)
Ronald B. Sklar; B.S.(NYU), LL.B.(Brooklyn), LL.M.(Nwestern), LL.M.(Yale)
Lionel Smith; B.Sc.(Tor.), LL.B.(W. Ont.), LL.M.(Camb.), D.Phil(Oxf.), LL.B.(Montr.) (James McGill Professor)
Stephan A. Smith; B.A.(Qu.), LL.B.(Tor.), D.Phil.(Oxf.) (William Dawson Scholar)
Margaret A. Somerville; A.M., F.R.C.S., A.u.A.(Pharm.) (Adel.), LL.B.(Syd.), D.C.L.(McG.), LL.D. Hon. Causa(Windsor,
Adjunct Professors
Kenneth Atlas; B.C.L., LL.B.(McG.)
Donald Bunker; B.A.(Sir G. Wms.), B.C.L., LL.M., D.C.L.(McG.)
Pierre Deschamps; L.Sc.R., B.C.L., LL.M., D.C.L.(McG.)
Morris J. Fish; B.A., B.C.L., LL.D.(McG.)
Robert Godin; B.C.L.(McG.), B.A.(Sir G. Wms.) (Wainwright Fellow)
Charles D. Gonthier; B.C.L.(McG.)
Peter Haanappel; LL.M., D.C.L.(McG.)
Sunny Handa; B.Com.(McG.), LL.B.(Tor.), LL.M., D.C.L.(McG.)
Rod Margo; LL.M.(McG.), Ph.D.(Lond.)
Peter Nesgos; D.C.L.(McG.)
John Saba; B.A., M.A., LL.B., LL.M., D.C.L.(McG.)
Francis P. Schubert; B.C.L., D.E.S. Rel. intern., Ph.D. Law(U. Geneva)
Peter Van Fenema; LL.M.(McG.)
Ludwig Weber; Lic. iur., Dr. Jur.(Heidel.), LL.M.(McG.)
James Woods; B.A., B.C.L., LL.B.(McG.)

45.2 Programs Offered

The Faculty of Law offers a range of programs at the graduate level. These include the degrees of Master of Laws (LL.M.) with thesis and non-thesis options, and Doctor of Civil Law (D.C.L.), as well as Graduate Certificates.

Students may choose to pursue either the LL.M. or the D.C.L. in the Faculty of Law, the Institute of Air and Space Law (IASL), or the Institute of Comparative Law (ICL). Graduate Certificates may only be completed within either the IASL or the ICL.

The Faculty of Law promotes study and research in private, commercial, international, and public law, as well as legal theory, from the perspectives of diverse legal traditions. In collaboration with the McGill School of Environmental Law, the Faculty offers an LLM. thesis or non-thesis option in Environment. The Faculty also offers two other options within the LL.M degree, a new cross-disciplinary European Studies Option (ESO) in collaboration with the Faculty of Arts, and a specialization in Bioethics. The D.C.L. degree always involves a substantial thesis.

The Institute of Air and Space Law operates within the Faculty of Law. The Institute offers a curriculum exploring legal issues that arise from international civil aviation and new technologies in space. It provides students with a comprehensive understanding of the legal processes regulating worldwide aerospace activities. The Institute offers the degrees of Master of Laws (LL.M.) with thesis and non-thesis and Doctor of Civil Law (D.C.L.), and a Graduate Certificate in Air and Space Law.

The Graduate Certificate in Air and Space Law is a course work program with a limited research and writing requirement. It is particularly appropriate for students with a strong professional orientation who do not wish to write a thesis.

The Institute of Comparative Law operates within the Faculty of Law as a centre of comparative legal studies. It accommodates national, international and transtnational studies and encourages openness to diverse legal cultures in teaching and research. The Institute offers the degrees of Master of Laws (LL.M.) and of Doctor of Civil Law (D.C.L.) and a Graduate Certificate in Comparative Law.

The Graduate Certificate in Comparative Law provides advanced training in subjects within the scope of the ICL to candidates who do not wish to undertake the master's degree. The Graduate Certificate is particularly appropriate for judges, law professors, and legal practitioners from countries undergoing substantial legal reform (such as post-Communist or developing countries) who wish to pursue advanced studies in areas such as civil, commercial, or human rights law.

45.3 Admission Requirements

General

The Faculty of Law Graduate Admissions Committee reviews applications and makes recommendations regarding admission to Graduate and Postdoctoral Studies (GPS). Final admissions decisions are taken by Graduate and Postdoctoral Studies.

For information and application forms please consult the Faculty website or write to the Graduate Programs Office in Law, McGill University, at the above address in section 45, ‘Law’, or via email at grad.law@mcgill.ca.

Language Requirement

Graduate-level courses are offered in English, and English-language abilities must be demonstrated for admission. In order to communicate fully with all law students at McGill, and to understand all course materials, the ability to speak and read French is an asset. At McGill's Faculty of Law, all students may choose to write essays, examinations and theses in English or French.

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. Before acceptance, appropriate exam results must be submitted directly from the TOEFL or IELTS Office. An institutional version of the TOEFL is not acceptable. Applications will not be considered if a TOEFL or IELTS test result is not available.

Generally, applicants must achieve a minimum TOEFL score of 690 (250 on the computer-based test or 100 on the internet-based test with each component score not less than 20) or 7.5 in the IELTS. There are, however, some exceptions; in the IASL, applicants must achieve a minimum TOEFL score of 577 (233 on the computer-based test or 90 on the internet-based test with each component score not less than 20) or 7.0 overall band in the IELTS.

In all programs, non-Canadian applicants whose mother tongue is French must achieve a minimum TOEFL score of 567 (227 on the computer-based test or 86 on the internet-based test, with each component score not less than 20) or 7.0 overall band in the IELTS. This is because at McGill, students can write essays, examinations and theses in French, even where the course is taught in English. All students should be aware that the majority of courses in Graduate Programs in Law are taught in English.

For information about the TOEFL, and to register to take the test, see www.toefl.org. For information about the IELTS, see www.ielts.org. There may be a lengthy delay for registration, and the communication of results takes approximately 40 days. For both tests, the official results should be sent directly from the TOEFL or IELTS Office. An institutional version of the TOEFL is not acceptable. Applications will not be considered if a TOEFL or IELTS test result is not available.

Before acceptance, appropriate exam results must be submitted directly from the TOEFL or IELTS Office. An institutional version of the TOEFL is not acceptable. Applications will not be considered if a TOEFL or IELTS test result is not available.

For information about the TOEFL, and to register to take the test, see www.toefl.org. For information about the IELTS, see www.ielts.org. There may be a lengthy delay for registration, and the communication of results takes approximately 40 days. For both tests, the official results should be sent directly from the test-taking institution to Graduate Programs in Law. For the TOEFL, McGill's institutional code is 0935 and Law's departmental code is 03. These codes must be provided to TOEFL when requesting a test report form. For the IELTS, applicants must ask for an official report to be sent to Graduate Programs in Law at the above address. For either test, the test must be taken sufficiently early for results to reach McGill no later than February 1 of the year of admission. Application files not completed by that date will not be considered.

French: The ability to speak or read French is an asset but not a necessity. In areas such as the study of private law in the civilian tradition or comparative private law, a reading knowledge of French is essential. Applicants should indicate their knowledge of French on the admissions questionnaire; they will be notified if French is essential to the area of study.
**Master's Degrees**
Candidates for admission to the LL.M. program must hold a Bachelor of Laws (LL.B.) degree, or its equivalent, with at least Upper Second Class honours or the equivalent of 3.0/4.0 cumulative grade point average. This standing does not guarantee admission; instead the Graduate Admissions Committee weighs the entire file, including the applicant's references and the quality of the research proposal.

Furthermore, in the case of thesis programs, the Committee must consider the availability of a supervisor. If a supervisor is not available in the applicant's preferred field of study, the applicant may be refused admission or else offered admission pending a change of field of study.

**LL.M. Interdisciplinary Options in Environment and European Studies:** Students who apply for admission to the LL.M. thesis or non-thesis program at the Faculty of Law may specify an interest in these options.

**LL.M. Specialization in Bioethics:** Requirements for admission to the master's program in Bioethics from the base discipline Law are the same as for admission to the LL.M. For further information, see the bioethics section of the Calendar, or contact the Chair, Master's Specialization in Bioethics, Biomedical Ethics Unit, 3647 Peel Street, Montreal, QC, H3A 1W9. Telephone: 514-398-6980; fax: 514-398-8349; email: kathleen.glass@mcgill.ca.

**D.C.L. Degree**
Applicants demonstrating outstanding academic ability will be considered for admission to the doctoral program.

Admission to the D.C.L. program occurs only when:

- a) the candidate has completed a graduate law degree with thesis at McGill or at another university, and
- b) the Graduate Admissions Committee is satisfied that the quality of his or her previous research is sufficient to justify admission to a doctoral program.

Review of the completed master's thesis is normally part of the admission decision-making process. Exceptionally, a candidate with a non-thesis master's degree with an outstanding file may be admitted to the doctoral program.

**Graduate Certificate Programs**
The requirements for admission to the Graduate Certificate programs are essentially the same as for the master's programs, except that greater weight may be placed on professional experience.

Candidates desiring a Graduate Certificate in Air and Space Law who do not hold a law degree may be admitted if they have earned an undergraduate university degree in another discipline and possess sufficient professional experience to compensate for the lack of a law degree (as determined by the Graduate Admissions Committee).

**45.4 Application Procedures**
An application will be considered upon receipt of:

1. application form with $100 application fee payable by credit card and non-refundable;
2. statement of academic program;
3. official transcripts and proof of degree;
4. certified translations of transcripts and proof of degree (if not written in French or English);
5. official university grading system;
6. letters of reference on forms provided for that purpose and/or official letterhead (sent directly by the referee to Graduate Programs in Law);
7. official TOEFL or IELTS score report (sent directly by the testing organization);
8. a curriculum vitae;
9. two recent passport photographs.

McGill's online application form for graduate program candidates is available at www.mcgill.ca/gradapplicants/apply. Documents corresponding to numbers 2-5 and 8-9 should be sent to the Coordinator, Graduate Programs in Law, at the above address in section 45, “Law”.

**Dates for Guaranteed Consideration**
For dates for guaranteed consideration, please consult the following website: www.mcgill.ca/gradapplicants/programs. Then select the appropriate program.

**45.5 Program Requirements**

**MASTER OF LAWS (LL.M.) DEGREES**

**Master of Laws (LL.M.); Law (Thesis) (45 credits)**
The 45-credit LL.M. program, thesis option, is a research-intensive graduate program focused on developing research interests into a thesis project under the supervision of a faculty member. Graduate-level courses on theoretical and methodological approaches to legal writing complement the research work and thesis completion process, and courses in specific areas of knowledge related to the candidate's research interests complete the program's credit requirements.

LL.M. candidates may be associated with the Centre for Human Rights and Legal Pluralism, the Quebec Research Centre of Private and Comparative Law, the Centre for Intellectual Property Policy, or one of the specialized Research Chairs at the Faculty of Law. For more information, see our website: www.mcgill.ca/law-gradprograms/programs/llm.

Candidates must remain in residence for three terms. The third term, usually devoted to thesis research, may be taken the summer of the first year. If the thesis is not completed in this time, students must register for additional sessions as needed. All degree requirements must be completed within a maximum of three years of the date of first registration.

**Thesis – Required (30 credits)**
CMPL 612 (3) Master’s Thesis 1*
CMPL 613 (3) Master’s Thesis 2
CMPL 614 (3) Master’s Thesis 3
CMPL 615 (6) Master’s Thesis 4
CMPL 616 (12) Master’s Thesis 5
CMPL 617 (3) Master’s Thesis 6

* As part of the course Master’s Thesis 1, a candidate may provide a protocol to his or her supervisor setting out details as to the thesis topic, the deadlines for the completion of the various thesis courses and the schedule of meetings with the thesis supervisor. Modifications to the protocol must be made in writing and submitted to the Associate Dean (Graduate Studies).

**Required Courses** (8 credits)
CMPL 610 (4) Legal Research Methodology
CMPL 641 (4) Theoretical Approaches to Law

**Complementary Courses** (7 credits)
The remaining 7 credits (or fewer if more credits are earned for the Master’s Thesis) are chosen from among Faculty offerings at the 500 and 600 level.

**Additional Thesis Courses**
With the approval of the Associate Dean (Graduate Studies) and Graduate and Postdoctoral Studies (GPS), students may take up to an additional 3 credits of thesis courses by completing one or both of:
CMPL 618 (2) Master's Thesis 7
CMPL 619 (1) Master's Thesis 8
Master of Laws (LL.M.); Law (Non-Thesis) (45 credits)
The 45-credit LL.M. non-thesis option complements previous legal education through specialized graduate-level coursework and in-depth research. It enhances expertise in selected areas of legal scholarship and includes the writing of a supervised, substantial paper in an area of interest.
Candidates must remain in residence for three terms. The third term is devoted to the Research Project, usually taken in the summer of the first year, meaning that students usually complete their program within one calendar year. If the research project is not completed in this time, students must register for additional sessions as needed. All degree requirements must be completed within a maximum of three years of the date of first registration.

Research Project – Required (15 credits)
CMPL 655 (15) Research Project 1
The supervised research project is a 15,000-word paper, assessed by the supervisor on a pass-fail basis, and is typically completed in the summer.

Required Courses (8 credits)
CMPL 610 (4) Legal Research Methodology
CMPL 641 (4) Theoretical Approaches to Law

Complementary Courses (22 credits)
The remaining 22 credits (or fewer if more credits are earned for the research project) are chosen from among Faculty offerings at the 500 and 600 level.

Additional Research Project Courses
With the approval of the Associate Dean (Graduate Studies) and Graduate and Postdoctoral Studies (GPS), students may take up to an additional 3 credits of research project courses by completing one or both of:
CMPL 656 (2) Research Project 2
CMPL 657 (1) Research Project 3

Master of Laws (LL.M.); Law (Thesis) – Bioethics Option (45 credits)
The LL.M. program, thesis option, in Bioethics is a research-intensive interdisciplinary, graduate program focused on developing research interests into a thesis project under the supervision of a faculty member. Graduate-level courses on theoretical and methodological approaches to legal writing complement the research work and thesis completion process, and courses in specific areas of knowledge related to the candidate’s research interests complete the program's credit requirements.

Candidates must remain in residence for three terms. The third term, usually devoted to thesis research, may be taken the summer of the first year. If the thesis is not completed in this time, students must register for additional sessions as needed. All degree requirements must be completed within a maximum of three years of the date of first registration.

Thesis – Required (29 credits)
CMPL 612 (3) Master's Thesis 1*
CMPL 613 (3) Master's Thesis 2
CMPL 614 (3) Master's Thesis 3
CMPL 615 (6) Master's Thesis 4
CMPL 616 (12) Master's Thesis 5
CMPL 618 (2) Master's Thesis 7

* As part of the course Master's Thesis 1, a thesis candidate must provide a protocol to his or her supervisor setting out details as to the thesis topic, the deadlines for the completion of the various thesis courses and the schedule of meetings with the thesis supervisor. Modifications to the protocol must be made in writing and submitted to the Associate Dean (Graduate Studies).

Required Courses (10 credits)
BIOE 680 (3) Bioethical Theory
BIOE 681 (3) Bioethics Practicum
CMPL 641 (4) Theoretical Approaches to Law.

Complementary Courses (11 credits)
one of the following:
BIOE 682 (3) Medical Basis of Bioethics
CMPL 642 (3) Law and Health Care
PHIL 543 (3) Seminar: Medical Ethics
RELG 571 (3) Religion and Medicine
8-9 credits at the 500 level or above of Faculty of Law courses or Bioethics courses.

Master of Laws (LL.M.); Law (Thesis) – Environment Option/Concentration (45 credits)
The Faculty of Law together with the School of Environment and other units at McGill, offers a 45-credit LL.M. program, thesis option, in Environment. This is a research-intensive interdisciplinary, graduate program focused on developing research interests into a thesis project under the supervision of a faculty member. Graduate-level courses on theoretical and methodological approaches to legal writing complement the research work and thesis completion process, and courses in specific areas of knowledge related to the candidate’s research interests complete the program's credit requirements.

Candidates must remain in residence for three terms. The third term, usually devoted to thesis research, may be taken the summer of the first year. If the thesis is not completed in this time, students must register for additional sessions as needed. All degree requirements must be completed within a maximum of three years of the date of first registration.

Thesis – Required (29 credits)
CMPL 612 (3) Master's Thesis 1*
CMPL 613 (3) Master's Thesis 2
CMPL 614 (3) Master's Thesis 3
CMPL 615 (6) Master's Thesis 4
CMPL 616 (12) Master's Thesis 5
CMPL 618 (2) Master's Thesis 7

* As part of the course Master's Thesis 1, a thesis candidate must provide a protocol to his or her supervisor setting out details as to the thesis topic, the deadlines for the completion of the various thesis courses and the schedule of meetings with the thesis supervisor. Modifications to the protocol must be made in writing and submitted to the Associate Dean (Graduate Studies).

Required Courses (10 credits)
CMPL 610 (4) Legal Research Methodology
ENVR 610 (3) Foundations of Environmental Policy
ENVR 650 (1) Environmental Seminar 1
ENVR 651 (1) Environmental Seminar 2
ENVR 652 (1) Environmental Seminar 3

Complementary Courses (6 credits)
3 - 6 credits chosen from:
CMPL 546 (3) International Environmental Law
CMPL 580 (3) Environment and the Law

0 - 3 credits chosen from:
ENVR 519 (3) Global Environmental Politics
ENVR 544 (3) Environmental Measurement and Modelling
ENVR 580 (3) Topics in Environment 3
ENVR 611 (3) The Economy of Nature
ENVR 620 (3) Environment and Health of Species
ENVR 622 (3) Sustainable Landscapes
ENVR 630 (3) Civilization and Environment 1
ENVR 680 (3) Topics in Environment 4
or another course at the 500 level or higher recommended by the advisory committee and approved by the Environment Option Committee.

McGill University, Graduate and Postdoctoral Studies 2009-2010
Master of Laws (L.L.M.); Law (Non-Thesis) – Environment Option

The Faculty of Law together with the School of Environment and other units at McGill offers a 45-credit, LL.M. program, non-thesis option, in Environment. The program complements previous legal education through specialized graduate-level coursework and in-depth research. It enhances expertise in selected areas of legal scholarship and includes the writing of a supervised, substantial paper in an area of interest.

Candidates must remain in residence for three terms. The third term is devoted to the Research Project, usually taken in the summer of the first year, meaning that students usually complete their program within one calendar year. If the research project is not completed in this time, students must register for additional sessions as needed. All degree requirements must be completed within a maximum of three years of the date of first registration.

Research Project – Required (17 credits)

The non-thesis option requires a substantial supervised research project during the third term of registration, a 15,000-word paper, assessed by the supervisor on a pass-fail basis, and typically completed in the summer.

CMPL 655 (15) Research Project 1
CMPL 656 (2) Research Project 2

Required Courses (10 credits)

CMPL 610 (4) Legal Research Methodology
ENVR 610 (3) Foundations of Environmental Policy
ENVR 650 (1) Environmental Seminar 1
ENVR 651 (1) Environmental Seminar 2
ENVR 652 (1) Environmental Seminar 3

Complementary Courses (18 credits)

15 credits chosen from:
CMPL 500 (3) Aboriginal Peoples and the Law
CMPL 546 (3) International Environmental Law
CMPL 580 (3) Environment and the Law
and/or other Faculty of Law offerings.

3 credits chosen from:
ENVR 519 (3) Global Environmental Politics
ENVR 544 (3) Environmental Measurement and Modelling
ENVR 580 (3) Topics in Environment 3
ENVR 611 (3) The Economy of Nature
ENVR 620 (3) Environment and Health of Species
ENVR 622 (3) Sustainable Landscapes
ENVR 630 (3) Civilization and Environment 1
ENVR 680 (3) Topics in Environment 4

or another course at the 500 level or higher recommended by the advisory committee and approved by the Environment Option Committee.

Master of Laws (L.L.M.); Law (Thesis) – European Studies Option

The 46-credit LL.M. program, thesis option, in European Studies is a research-intensive graduate program focused on developing research interests into a thesis project under the supervision of a faculty member. Graduate-level courses on theoretical and methodological approaches to legal writing complement the research work and thesis completion process, and courses in specific areas of knowledge related to the candidate’s research interests complete the program’s credit requirements.

This option is a cross-disciplinary program open to students whose work is focused on Europe, in particular on issues relating to European integration, broadly understood. Students will take an interdisciplinary seminar and three courses on European themes and issues as part of their LL.M. thesis program. The thesis must be on a topic relating to European Studies, approved by the European Studies Option coordinating committee. Knowledge of French, while not a strict pre-requisite, is an important asset for admission and will be encouraged as part of the program, as well as knowledge of a third European language.

Candidates must remain in residence for three terms. The third term, usually devoted to thesis research, may be taken the summer of the first year. If the thesis is not completed in this time, students must register for additional sessions as needed. All degree requirements must be completed within a maximum of three years of the date of first registration.

Thesis - Required (30 credits)
The Master’s Thesis programs consist of a course work component and a thesis of approximately 100 pages.

CMPL 612 (3) Master’s Thesis 1*
CMPL 613 (3) Master’s Thesis 2
CMPL 614 (3) Master’s Thesis 3
CMPL 615 (6) Master’s Thesis 4
CMPL 616 (12) Master’s Thesis 5
CMPL 617 (3) Master’s Thesis 6

* As part of the course Master’s Thesis 1, a thesis candidate must provide a protocol to his or her supervisor setting out details as to the thesis topic, the deadlines for the completion of the various thesis courses and the schedule of meetings with the thesis supervisor. Modifications to the protocol must be made in writing and submitted to the Associate Dean (Graduate Studies).

Required Courses (7 credits)

CMPL 610 (4) Legal Research Methodology
LAWG 659 (3) Interdisciplinary Seminar in European Studies

Complementary Courses (9 credits)

CMPL 536 (3) European Community Law 1
CMPL 537 (2) European Community Law 2

One or both of these courses may be replaced with another course at the 500 level or above on European Studies offered by the Faculty of Law or the Faculty of Arts, approved by the Associate Dean (Graduate Studies).

one of:
CMPL 600 (4) Legal Traditions
CMPL 641 (4) Theoretical Approaches to Law

INSTITUTE OF COMPARATIVE LAW

Master of Laws (L.L.M.); Law (Thesis); Comparative Law (45 credits)

The Institute of Comparative Law (ICL) offers a 45-credit LL.M. program, thesis option, in Comparative Law. This research-intensive graduate program focuses on developing research interests into a thesis project under the supervision of a faculty member. Graduate-level courses on theoretical and methodological approaches to legal writing complement the research work and thesis completion process, and courses in specific areas of knowledge related to the candidate’s research interests complete the program’s credit requirements.

Students pursuing their LL.M. within the ICL may be associated with the Centre for Human Rights and Legal Pluralism, the Quebec Research Centre of Private and Comparative Law, the Centre for Intellectual Property Policy, or one of the specialized Research Chairs at the Faculty of Law. For more information, see our website: www.mcgill.ca/law-gradprograms/programs/lm.

Candidates must remain in residence for three terms. The third term, usually devoted to thesis research, may be taken the summer of the first year. If the thesis is not completed in this time, students must register for additional sessions as needed. All degree requirements must be completed within a maximum of three years of the date of first registration.

Thesis – Required (30 credits)

CMPL 612 (3) Master’s Thesis 1*
CMPL 613 (3) Master’s Thesis 2
CMPL 614 (3) Master’s Thesis 3
CMPL 615 (6) Master’s Thesis 4
CMPL 616 (12) Master’s Thesis 5
CMPL 617 (3) Master’s Thesis 6
* As part of the course Master's Thesis 1, a thesis candidate must provide a protocol to his or her supervisor setting out details as to the thesis topic, the deadlines for the completion of the various thesis courses and the schedule of meetings with the thesis supervisor. Modifications to the protocol must be made in writing and submitted to the Associate Dean (Graduate Studies).

**Required Courses** (12 credits)
- CMPL 600 (4) Legal Traditions
- CMPL 610 (4) Legal Research Methodology
- CMPL 641 (4) Theoretical Approaches to Law

**Complementary Courses** (3 credits)
The remaining 3 credits (or fewer if more credits are earned for the Master's Thesis) are chosen from among Faculty offerings at the 500 and 600 level.

**Additional Thesis Courses**
With the approval of the Associate Dean (Graduate Studies) and Graduate and Postdoctoral Studies (GPS), students may take up to an additional 3 credits of thesis courses by completing one or both of:
- CMPL 618 (2) Master's Thesis 7
- CMPL 619 (1) Master's Thesis 8

**Master of Laws (L.L.M.); Law (Non-Thesis); Comparative Law (45 credits)**
The Institute of Comparative Law (ICL) offers a 45-credit LL.M. program, non-thesis option, in Comparative Law which complements previous legal education through specialized graduate-level coursework and in-depth research. It enhances expertise in selected areas of legal scholarship and includes the writing of a supervised, substantial paper in an area of interest.

Candidates must remain in residence for three terms. The third term is devoted to the Research Project, usually taken in the summer of the first year, meaning that students usually complete their program within one calendar year. If the research project is not completed in this time, students must register for additional sessions as needed. All degree requirements must be completed within a maximum of three years of the date of first registration.

**Research Project – Required** (15 credits)
- CMPL 655 (15) Research Project 1

The non-thesis option requires a substantial supervised research project during the third term of registration, a 15,000-word paper, assessed by the supervisor on a pass-fail basis, and typically completed in the summer.

**Required Courses** (12 credits)
- CMPL 600 (4) Legal Traditions
- CMPL 610 (4) Legal Research Methodology
- CMPL 641 (4) Theoretical Approaches to Law

**Complementary Courses** (18 credits)
The remaining 18 credits (or fewer if more credits are earned for the research project) are chosen from among Faculty offerings at the 500 and 600 level.

**Additional Research Project Courses**
With the approval of the Associate Dean (Graduate Studies) and Graduate and Postdoctoral Studies (GPS), students may take up to an additional 3 credits of research project courses by completing one or both of:
- CMPL 656 (2) Research Project 2
- CMPL 657 (1) Research Project 3

**INSTITUTE OF AIR AND SPACE LAW**

**Master of Laws (L.L.M.); Law (Thesis); Air and Space Law (45 credits)**
The Institute of Air and Space Law (IASL) offers a 45-credit LL.M. program, thesis option, in Air and Space Law which complements previous legal education through specialized graduate-level coursework and in-depth research. It enhances expertise in selected areas of legal scholarship and includes the writing of a supervised, substantial paper in an area of interest.

Candidates must remain in residence for three terms. The third term is devoted to the Research Project, usually taken in the summer of the first year, meaning that students usually complete their program within one calendar year. If the research project is not completed in this time, students must register for additional sessions as needed. All degree requirements must be completed within a maximum of three years of the date of first registration.

**Research Project – Required** (18 credits)
- ASPL 655 (15) Research Project 1
- ASPL 656 (2) Research Project 2
- ASPL 657 (1) Research Project 3

The non-thesis option requires a substantial supervised research project during the third term of registration, a 15,000-word paper, assessed by the supervisor on a pass-fail basis, and typically completed in the summer.

**Required Courses** (9 credits)
- ASPL 633 (3) Public International Air Law
- ASPL 636 (3) Private International Air Law
- ASPL 637 (3) Space Law: General Principles

**Complementary Courses** (11 credits)
- 4 credits from the following:
  - CMPL 610D1 (2) Legal Research Methodology
  - CMPL 610D2 (2) Legal Research Methodology
  - CMPL 641 (4) Theoretical Approaches to Law
- 7 credits, at the 500 level or higher, chosen from among Faculty offerings (including ASPL offerings).

**Master of Laws (L.L.M.); Law (Non-Thesis); Air and Space Law (45 credits)**
The Institute of Air and Space Law (IASL) offers a 45-credit LL.M. program, non-thesis option, in Air and Space Law which complements previous legal education through specialized graduate-level coursework and in-depth research. It enhances expertise in selected areas of legal scholarship and includes the writing of a supervised, substantial paper in an area of interest.

Candidates must remain in residence for three terms. The third term is devoted to the Research Project, usually taken in the summer of the first year, meaning that students usually complete their program within one calendar year. If the research project is not completed in this time, students must register for additional sessions as needed. All degree requirements must be completed within a maximum of three years of the date of first registration.

**Research Project – Required** (18 credits)
- ASPL 655 (15) Research Project 1
- ASPL 656 (2) Research Project 2
- ASPL 657 (1) Research Project 3

The non-thesis option requires a substantial supervised research project during the third term of registration, a 15,000-word paper, assessed by the supervisor on a pass-fail basis, and typically completed in the summer.

**Required Courses** (9 credits)
- ASPL 633 (3) Public International Air Law
- ASPL 636 (3) Private International Air Law
- ASPL 637 (3) Space Law: General Principles

**Complementary Courses** (18 credits)
- 4 credits from the following:
  - CMPL 610D1 (2) Legal Research Methodology
  - CMPL 610D2 (2) Legal Research Methodology
  - CMPL 641 (4) Theoretical Approaches to Law
- 14 credits, at the 500 level or higher, chosen from among Faculty offerings (including ASPL offerings).
**DOCTOR OF CIVIL LAW (D.C.L.) DEGREES**

The Doctor of Civil Law (D.C.L.) program allows for the development of substantive and original contributions to legal research and knowledge under the supervision of a faculty member. Doctoral candidates normally plan to pursue an academic career and develop their approach to pedagogy, research and writing while at McGill.

D.C.L. candidates may be associated with the Centre for Human Rights and Legal Pluralism, the Quebec Research Centre of Private and Comparative Law, the Centre for Intellectual Property Policy, the Centre for International Sustainable Development Law or one of the specialized Research Chairs at the Faculty of Law. For more information, see our website: www.mcgill.ca/law-gradprograms/programs/dcl.

The degree will be awarded, at the earliest, after the completion of three years of residence in the Faculty. In the case of a candidate holding an LL.M. from McGill or an equivalent degree from another university, the residency requirement may be reduced to two years of study beyond the master's degree, with the approval of Graduate and Postdoctoral Studies, upon recommendation of the Graduate Studies Committee of the Faculty of Law.

The core of the D.C.L. program is a substantial thesis of up to 400 pages that makes a significant contribution to legal scholarship, evidencing in concept and execution the original work of the candidate. Its form must be suitable for publication. The thesis must be submitted within four years of completion of the residency requirement.

**Comprehensive – Required (0 credits)**

Every candidate must successfully pass a comprehensive examination, usually after one year in the program.

LAWG 701 (0) Comprehensive Exam - Law

**Required Course (4 credits)**

CMPL 641 (4) Theoretical Approaches to Law

**Complementary Course (4 credits)**

Students are encouraged to take:

CMPL 610 (4) Legal Research Methodology

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

The Institute of Comparative Law offers the D.C.L. program in Comparative Law, which allows for the development of substantive and original contributions to legal research and knowledge under the supervision of a faculty member. Doctoral candidates normally plan to pursue an academic career and develop their approach to pedagogy, research and writing while at McGill.

While pursuing their program within the ICL, D.C.L. candidates in the ICL may be associated with the Centre for Human Rights and Legal Pluralism, the Quebec Research Centre of Private and Comparative Law, the Centre for Intellectual Property Policy, or one of the specialized Research Chairs at the Faculty of Law. For more information, see our website: www.mcgill.ca/law-gradprograms/programs/dcl.

The degree will be awarded, at the earliest, after the completion of three years of residence in the Faculty. In the case of a candidate holding an LL.M. from McGill or an equivalent degree from another university, the residency requirement may be reduced to two years of study beyond the master's degree, with the approval of Graduate and Postdoctoral Studies, upon recommendation of the Graduate Studies Committee of the Faculty of Law.

The core of the D.C.L. program is a substantial thesis of up to 400 pages that makes a significant contribution to legal scholarship, evidencing in concept and execution the original work of the candidate. Its form must be suitable for publication. The thesis must be submitted within four years of completion of the residency requirement.

**Comprehensive – Required (0 credits)**

Every candidate must successfully pass a comprehensive examination, usually after one year in the program. ASPL 701 (0) Comprehensive - Air/Space Law

**Complementary Course (8 credits)**

Students are encouraged to take:

CMPL 610 (4) Legal Research Methodology

CMPL 641 (4) Theoretical Approaches to Law

**GRADUATE CERTIFICATES IN LAW**

**Graduate Certificate in Comparative Law**

The Graduate Certificate in Comparative Law is offered through the Institute of Comparative Law and provides advanced legal training over one term of full-time studies or two terms of part-time studies to candidates who wish to pursue graduate legal education for career-related purposes.

The certificate is awarded after at least one term of residence in the Faculty and upon completion of a minimum of 15 credits to a maximum of 29 credits. In every case, the program is structured to meet individual needs and must be approved by the Associate Dean (Graduate Studies). Courses are chosen on an individual basis.

For more information, see our website: www.mcgill.ca/law-gradprograms/programs/certificate.

**Graduate Certificate in Air and Space Law**

The Graduate Certificate in Air and Space Law offered through the Institute of Air and Space Law is a course work program, appropriate for students with a strong professional orientation.

The certificate is awarded after at least one term of residence in the Faculty and upon completion of a minimum of 15 academic credits of law courses. Students may take courses beyond the minimum of 15 credits, and these additional courses may be non-law courses. Students in the program often remain in residence for both terms and take all of the Air and Space Law courses.

For more information, see our website: www.mcgill.ca/law-gradprograms/programs/certificate.

**Required Courses (9 credits)**

ASPL 633 (3) Public International Air Law

ASPL 636 (3) Private International Air Law

ASPL 637 (3) Space Law: General Principles
Complementary Course (6 credits)
6 additional credits of graduate courses.

45.6 Courses
Students preparing to register should consult Class Schedule on the web at www.mcgill.ca/student-records/register/class-schedule for the most up-to-date list of courses available; courses may have been added, rescheduled or cancelled after this Calendar was published. Class Schedule lists courses by term and includes days, times, locations, and names of instructors.

Further information can be found on the Faculty of Law’s website: www.mcgill.ca/law-studies.

Courses with numbers ending D1 and D2 are taught in two consecutive terms (most commonly Fall and Winter). Students must register for both the D1 and D2 components. No credit will be given unless both components (D1 and D2) are successfully completed in consecutive terms.
The course credit weight is given in parentheses after the title.

INSTITUTE OF AIR AND SPACE LAW COURSES
ASPL 613 GOVERNMENT REGULATION OF AIR TRANSPORT. (3) Economic regulation of air transport and navigation, deregulation, liberalization, open skies. Economic and regulatory theories, competition, anti-trust regulation. Status, negotiation, and implementation of international agreements on air services.
ASPL 614 AIRLINE BUSINESS AND LAW. (3) Interdisciplinary analysis of the legal issues confronting airlines in such areas as economics, finance, securities, bankruptcy, pricing, marketing, distribution, alliances, joint-ventures and competition.
ASPL 633 PUBLIC INTERNATIONAL AIR LAW. (3) Sources of public international law relating to the air space and its aeronautical uses. International aviation organizations and their law-making functions. Legal responses to aviation terrorism.
ASPL 637 SPACE LAW: GENERAL PRINCIPLES. (3) Examination of the role of international law in the regulation of outer space activities.
ASPL 638 LAW OF SPACE APPLICATIONS. (3) The legal implications of various space applications, such as telecommunications and the role therein of various international organizations; remote sensing by satellites; space stations; commercial and military uses of outer space.
ASPL 639 GOVERNMENT REGULATION OF SPACE ACTIVITIES. (3) National public and private law and regulatory regimes governing space activities, particularly those that are carried out by private entities for commercial purposes.
ASPL 690 MASTER’S THESIS 1. (4) Preparation of thesis proposal.
ASPL 691 MASTER’S THESIS 2. (3) Preparation of literature review.
ASPL 694 MASTER’S THESIS 5. (3) Thesis research report.
ASPL 701 COMPREHENSIVE - AIR/SPACE LAW. (0) (Restriction: DCL graduate students in Air and Space Law.) An examination that must be passed by all doctoral candidates in order to continue in the doctoral program.

FACULTY OF LAW 500- TO 700-LEVEL COURSES
BUSU 502 INTELLECTUAL & INDUSTRIAL PROPERTY. (3) (Restrictions: Not open to first year students. Not open to students who have taken BUSU 463.) An examination of private relationships involving inventive and creative activity through an analysis of various conceptions of intellectual property regimes, in the context of public governance of public space, as well as the interrelationship between international and national law.
BUSU 504 SECURITIES REGULATION. (3) (Restriction: Not open to students who have taken BUSU 372.) An introduction to the structure of Canada’s capital markets and a review of major features of securities regulation using the Quebec or Ontario scheme as background. An examination of the general regulatory framework for licensing of securities professionals, disclosure to investors and enforcement powers of regulators.
BUSU 505 CORPORATE FINANCE. (3) (Restriction: Not open to students who have taken BUSU 246.) Advanced issues in business and corporate law. Principles underlying decisions about a corporation’s capital structure. Distinctive aspects and rights of corporate securities, including common shares, preferred shares.
CMPL 500 ABORIGINAL PEOPLES AND THE LAW. (3) Current legal topics relating to native peoples, including the concept of aboriginal title, and constitutional aspects of contemporary land claims. Aspects of Canadian law relating to native peoples, their constitutional status, and hunting and fishing rights.
CMPL 506 LEGAL THEORY. (3) The philosophical basis of private law, from a comparative and historical perspective.
CMPL 515 INTERNATIONAL CARRIAGE OF GOODS BY SEA. (3) A comparative study of private international maritime law.
CMPL 516 INTERNATIONAL DEVELOPMENT LAW. (3) The law and economics of development, including the role of agencies of the United Nations in development, the role of UNCTAD in formulating uniform rules of international trade, and the World Bank and the International Monetary Fund and their role in financing development.
CMPL 522 MEDICAL LIABILITY. (3) (Restriction: Not open to students in first year of Law.) A critical examination of medical liability issues, including doctor-hospital-patient relationship; medical duty of care; medical fault and causation; wrongful life, birth and conception; informed consent and refusal; lack of resources; defective products; nosocomial infections; contaminated blood transfusions; interaction between law and science; future of medical liability.
CMPL 533 RESOLUTION OF INTERNATIONAL DISPUTES. (3) Conflict of jurisdictions and recognition of foreign judgments, as well as arbitration between parties to international contracts, with particular reference to international conventions.
CMPL 536 EUROPEAN COMMUNITY LAW 1. (3) The Treaty of Rome establishing the European Community and current efforts to create a homogenous structure for commerce and competition in Europe.
CMPL 539 INTERNATIONAL TAXATION. (3) Canadian tax treatment of subjects, including the export of goods and services, carrying on business in other countries, international employee transfers, international re-organizations, and international joint ventures and partnerships.
CMPL 543 LAW AND PRACTICE OF INTERNATIONAL TRADE. (3) The fundamental aspects of international law governing international trade, and governmental regulation of international trade in Canada and Canada’s major trading partners.
CMPL 546 INTERNATIONAL ENVIRONMENTAL LAW. (3) Introduction to this continuously expanding and evolving branch of international law. It will focus on the particularities of the international legal system and their implications for environmental protection; economic and ethical dimensions of international environmental policy; selected environmental problems; and, discussion of new approaches to solving existing problems.
CMPL 547 CANADIAN LEGAL HISTORY. (3) The history of Canadian law with emphasis on social history of law and legal history of Canadian society.

CMPL 553 INTERNATIONAL MARITIME CONVENTIONS. (3) International maritime conventions in respect of collisions, jurisdiction, limitation of liability, and their domestic interpretation, maritime liens and mortgages, marine insurance, and salvage.

CMPL 565 INTERNATIONAL HUMANITARIAN LAW. (3) (Prerequisite: PUB2 105) (Restriction: Not open to first year students.) Rules governing international and internal armed conflicts; historical and philosophical foundations; constraints on means to wage war; treatment of protected individuals, including prisoners of war, civilians and peacekeepers; enforcement, including belligerent reprisals and criminal prosecution; links with norms protecting human rights, the environment and cultural property; impact of cultural diversity.

CMPL 568 EXTRAJUDICIAL DISPUTE RESOLUTION. (3) (Restriction: Not open to students in the first year of Law.) An examination for the non-adjudicative means of dispute resolution, including mediation and consensual arbitration.

CMPL 571 INTERNATIONAL LAW OF HUMAN RIGHTS. (3) International protection of human rights, particularly by the United Nations, its specialized agencies, and the Council of Europe.


CMPL 577 COMMUNICATIONS LAW. (3) Regulation of common communication carriers and mass media in Canada, including legal developments initiated by foreign market competition, and the regulatory authority of the C.R.T.C.

CMPL 580 ENVIRONMENT AND THE LAW. (3) Environmental law, with emphasis on ecological, economic, political, and international dimensions.

LAWG 500 COMPLEX LEGAL TRANSACTIONS 1. (3) In-depth case studies of complex legal transactions, to allow students to learn how areas of law interact in a sophisticated, practical environment, and to permit them to develop their analytical and research skills. Transactions may include land development schemes, national and international issues of securities and complex non-commercial transactions.

LAWG 502 SUSTAINABLE DEVELOPMENT. (3) (Restriction: Restricted to Law students.) (Note: Non-Law students require permission from instructor & SAO.) Foundations of sustainable development as a justice claim instantiated in law and policy. Topics of investigation include: theoretical (in)coherence; institutional architecture; principles of international and domestic law; the integration of social, economic and environmental goods; inter-generational justice, precaution and uncertainty; adoption in soft law.

LAWG 511 SPECIALIZED TOPICS IN LAW 1. (1) (Restriction: Must have completed first year Law.) An intensive study of a particular topic in public or private law.

LAWG 514 SPECIALIZED TOPICS IN LAW 4. (2) (Restriction: Must have completed first year Law.) An intensive study of a particular topic in public or private law.

LAWG 515 SPECIALIZED TOPICS IN LAW 5. (2) (Restriction: Must have completed first year Law.) An intensive study of a particular topic in public or private law.

LAWG 516 SPECIALIZED TOPICS IN LAW 6. (3) (Restriction: Must have completed first year Law.) An intensive study of a particular topic in public or private law.

LAWG 517 SPECIALIZED TOPICS IN LAW 7. (3) (Restriction: Must have completed first year Law.) An intensive study of a particular topic in public or private law.

LAWG 518 SPECIALIZED TOPICS IN LAW 8. (3) (Restriction: Must have completed first year Law.) An intensive study of a particular topic in public or private law.

LAWG 525 LEGAL EDUCATION SEMINAR. (3) (Note: Open to under-graduate students who have completed four terms in the faculty and to graduate students.) A review of the aims, objectives, methods and techniques of legal education, including design and execution of the curriculum; an inquiry into law's ontology and legal epistemology; an examination of practical issues (attending graduate school, selecting a supervisor, types of legal research and employment as a law teacher).

PUB2 500 LAW AND PSYCHIATRY. (3) (Restriction: Open to a limited number of students in Law, Psychiatry and Psychology. Not open to students who have taken PUB2 419.) The roles of lawyers and psychiatrists in the handling of the mentally ill within the legal process. Consideration of the civil commitment and criminal commitment processes, insanity and "automatism" defences, the psychiatrist as expert witness, mental illness as a problem in relation to legal capacity. Some sessions will be conducted jointly with members of the psychiatric profession.

PUB2 501 ADVANCED CRIMINAL LAW. (3) (Restriction: Not open to students who have taken PUB2 421.) Specific crimes and defenses, and problems in procedure, as a continuation of Criminal Law and Criminal Procedure. Selected topics will be announced in advance.

PUB2 502 INTERNATIONAL CRIMINAL LAW. (3) (Restriction: Not open to students who have taken PUB2 425.) Crimes against the law of nations, war crimes, the Nuremberg trials, the Eichmann case, genocide and the way in which states co-operate to fight organized crime, terrorism, hijacking, etc. Topics include: jurisdiction (crimes committed in foreign countries, at sea, in aircraft, extradition, international judicial assistance) and the recognition and enforcement of foreign criminal sentences.

PUB2 504 SENTENCING IN CANADIAN LAW. (3) (Restriction: Not open to students who have taken PUB2 424.) Survey of principles of sentencing and correctional law in Canada. This course reviews general principles such as aims of punishment, matters of procedures and evidence, and review of sentences by appellate courts. A detailed examination of selected topics include participation of victims in sentencing, dangerous offenders, native offenders, homicide cases.

PUB2 505 STATUTORY INTERPRETATION. (3) (Restrictions: Not open to first year law students. Not open to students who have taken PUB2 402.) Legislation as a legal instrument, its various classifications, purposes and forms, styles of legislative drafting, codification, the process of interpretation, the interpretation of statutes and codes and rules of construction.

COURSES OPEN ONLY TO GRADUATE STUDENTS

CMPL 600 LEGAL TRADITIONS. (4) (Restrictions: Restricted to students in the Institute of Comparative Law. Other students by permission only.) Examination of the concept of a legal tradition, including elements of particular legal traditions, their philosophical foundations, their implementation through institutions, and their influence on one another.

CMPL 601 CIVIL LAW PERSPECTIVES. (4) (Restriction: Open only to students who do not have a first degree in the civil law.) Provides students from the civil law tradition with a graduate-level perspective on the civil law tradition.

CMPL 602 COMMON LAW PERSPECTIVES. (4) (Restriction: Open only to students who do not have a first degree in the common law.) Provides students from the civil law tradition with a graduate-level perspective on the common law tradition.

CMPL 603 HUMAN RIGHTS & CULTURAL DIVERSITY. (4) Current topics in human rights and cultural diversity.

CMPL 604 INTERNATIONAL BUSINESS LAW. (4) Current topics in international business law.

CMPL 605 REGULATION TECHNOLOGY/SOCIETY. (4) Current topics in regulation, technology, and society.
CMPL 610 LEGAL RESEARCH METHODOLOGY. (4) (Restriction: Open only to graduate law students registered in a non-thesis Master's program or permission of instructor.) A programme of instruction in legal research methodology, including electronic legal research and the formulation of research plans.

CMPL 612 MASTER'S THESIS 1. (3) Preparation of thesis proposal.

CMPL 613 MASTER'S THESIS 2. (3) Preparation of literature review.


CMPL 615 MASTER'S THESIS 4. (6) Thesis research report.

CMPL 616 MASTER'S THESIS 5. (12) Completion of thesis.

CMPL 617 MASTER'S THESIS 6. (3) Thesis research report.

CMPL 618 MASTER'S THESIS 7. (2) Thesis research project.

CMPL 619 MASTER'S THESIS 8. (1) (Restriction: This course is open only to graduate law students registered in a with-thesis Master's program in the Faculty of Law.) Thesis research project.

CMPL 635 INDEPENDENT STUDY 1. (3)

CMPL 636 INDEPENDENT STUDY 2. (4)

CMPL 637 INDEPENDENT STUDY 3. (3)

CMPL 641 THEORETICAL APPROACHES TO LAW. (4) Introduction to a variety of theoretical approaches to legal scholarship.

CMPL 642 LAW AND HEALTH CARE. (3) (Limited enrolment.) The study of legal and ethical issues raised in medicine and healthcare with a particular focus upon the relationship between patient and healthcare professionals.

CMPL 655 RESEARCH PROJECT 1. (15) (Restriction: This course is open only to students registered in a non-thesis Master's program in the Faculty of Law.) A major research paper on a current topic.

CMPL 656 RESEARCH PROJECT 2. (2) (Prerequisite: CMPL 655.) (Restriction: This course is open only to students registered in a non-thesis Master's program in the Faculty of Law.) Continuation of a major research paper on a current topic.

CMPL 657 RESEARCH PROJECT 3. (1) (Prerequisite: CMPL 655 and/or CMPL 665.) (Restriction: This course is open only to students registered in a non-thesis Master's program in the Faculty of Law.) Continuation of a major research paper on a current topic.

CMPL 701 COMPREHENSIVE EXAMINATION-COMPARATIVE LAW. (0) (Restriction: D.C.L. graduate students in Comparative Law.) An examination that must be passed by all doctoral candidates in order to continue in the doctoral program.

LAWG 659 INTERDISCIPLINARY SEMINAR IN EUROPEAN STUDIES. (3) (Restriction: Only open to students in European Studies Option.) Interdisciplinary seminar on a theme relevant to the study of Europe.

LAWG 701 COMPREHENSIVE EXAM - LAW. (0) (Restriction: D.C.L. graduate students in Law.) An examination that must be passed by all doctoral candidates in order to continue in the doctoral program.

46 Linguistics

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Chair — Glyne L. Piggott

46.1 Staff

Emeritus Professors
C.D. Ellis; B.A.(Cant. & McGill.), M.A.(Toronto & Yale), Ph.D.(McG.)
M. Gogrin; M.A., Ph.D.(PENN.)
M. Paradis; B.A.(Montréal.), M.A., Ph.D.(McGill.), Ph.D.(Montréal.)

Professors
Y. Grodzinsky; B.Sc.(Hebrew), Ph.D.(Brandeis) (Canada Research Chair)
G.L. Piggott; B.A.(W.I.), M.A., Ph.D.(Toronto)
L. White; M.A.(Cant.), Ph.D.(McG.) (James McGill Professor)

Associate Professors
C. Bobberg; B.A.(Alta.), Ph.D.(Penn.)
H.M. Goad; B.A.(Br. Columbia), M.A., Ph.D.(California)
B. Schwarz; M.A.(Tubingen), Ph.D.(Mass.)
L. de M. Travis; B.A.(Yale), Ph.D.(MIT)

Assistant Professors
J. Nissenbaum; B.A.(Oberlin), Ph.D.(MIT)
J. Shimoyama; B.A., M.A.(Ochanomizu University), Ph.D.(Mass.)
M. Wagner; M.A.(Humboldt), Ph.D.(MIT)

46.2 Programs Offered

M.A. (non-thesis) and Ph.D.
Ph.D. Option in Language Acquisition (LAP)

Information about this option is available from the Department and on the following website: http://ego.psych.mcgill.ca/lap.html.

46.3 Admission Requirements

Applicants to the M.A. or Ph.D. should have completed a B.A. with a specialization in linguistics. Applications are also invited from students with a background in other disciplines. Strong candidates who do not satisfy all requirements may be required to take additional undergraduate courses or may be admitted to a Qualifying Program which permits them to make up the gaps in their background.

46.4 Application Procedures

Applications will be considered upon receipt of:
1. application form;
2. transcripts;
3. letters of reference;
4. statement of purpose;
5. test results for international students: TOEFL (section 5.4 "Competency in English");
6. application fee of $100 (money order or certified cheque in Canadian funds).

Dates for Guaranteed Consideration

For dates for guaranteed consideration, please consult the following website: www.mcgill.ca/gradapplicants/apply. Then select the appropriate program.

McGill’s online application form for graduate program candidates is available at www.mcgill.ca/gradapplicants/apply.

46.5 Program Requirements

M.A. in Linguistics (Non-Thesis) (45 credits)

Required Courses (15 credits)
LING 600 (3) M.A. Research Seminar 1
LING 615 (3) Logic for Semantics
LING 631 (3) Phonology 3
LING 660 (3) Semantics 3
LING 671 (3) Syntax 3

LING 672 (3) Syntax 2
Complementary Courses (15 credits)
12 - 15 credits in linguistics at the 500, 600, or 700 level
0 - 3 credits in a related field at the 500, 600, or 700 level

Research Paper - Required (15 credits)
LING 607 (15) M.A. Research Paper

Ph.D. Program

Ph.D. in Linguistics

Required Courses (21 credits)
LING 615 (3) Logic for Semantics
LING 619 (3) Experimental Foundations
LING 631 (3) Phonology 3
LING 660 (3) Semantics 3
LING 671 (3) Syntax 3
LING 701 (3) Ph.D. Research Seminar 1
LING 702 (3) Ph.D. Research Seminar 2

Comprehensives - Required
LING 706 (0) Ph.D. Evaluation 1
LING 707 (0) Ph.D. Evaluation 2

Note: LING 706 and LING 707 must be completed before proceeding to thesis research.

Complementary Courses (18 credits)
3 credits from the following:
LING 520 (3) Sociolinguistics 2
LING 521 (3) Dialectology
LING 555 (3) Language Acquisition 2
LING 590 (3) Language Acquisition & Breakdown
LING 651 (3) Topics in Acquisition of Phonology
LING 655 (3) Theory of L2 Acquisition
LING 690 (3) Seminar in Neurolinguistics
LING 720 (3) Advanced Seminar in Sociolinguistics
LING 755 (3) Advanced Seminar: Language Acquisition
LING 790 (3) Advanced Seminar in Neurolinguistics

6 additional credits at the 500, 600, or 700 level, at least one in the student’s intended research area.

Note: Students intending to specialize in semantics must take the following course:

9 additional credits from one of the following Streams:

Theory Stream:
LING 635 (3) Phonology 4
LING 665 (3) Semantics 4
LING 675 (3) Syntax 4

OR

Experimental Stream:
3 credits in statistics at the 500, 600, or 700 level and 6 credits from the following:
LING 635 (3) Phonology 4
LING 665 (3) Semantics 4
LING 675 (3) Syntax 4

Ph.D. in Linguistics – Language Acquisition Option/Concentration

Students must satisfy all program requirements for the Ph.D. in Linguistics. The Ph.D. thesis must be on a topic relating to language acquisition, approved by the LAP committee.

Required Courses for the Language Acquisition Option (8 credits)
PSYC 709 (2) Language Acquisition Issues 1
LING 710 (2) Language Acquisition Issues 2
EDSL 711 (2) Language Acquisition Issues 3
SCSD 712 (2) Language Acquisition Issues 4

Complementary Courses (9 credits)
3 credits of graduate-level statistics from courses such as: EDPE 676, EDPE 682, PSYC 650, PSYC 651; students who have taken an equivalent course in statistics, or are currently taking an equivalent course as part of their Ph.D. program requirements, will be deemed to have satisfied this requirement for the Language Acquisition Option.

At least 6 credits selected from the following list; at least one course must be outside the Department of Linguistics:
EDSL 620 (3) Critical Issues in Second Language Education
EDSL 623 (3) Second Language Learning
EDSL 624 (3) Educational Sociolinguistics
EDSL 627 (3) Classroom-Centred Second Language Research
EDSL 629 (3) Second Language Assessment
EDSL 632 (3) Second Language Literacy Development
EDSL 664 (3) Second Language Research Methods
LING 555 (3) Language Acquisition 2
LING 590 (3) Language Acquisition and Breakdown
LING 651 (3) Topics in Acquisition of Phonology
LING 655 (3) Theory of L2 Acquisition
LING 755 (3) Advanced Seminar: Language Acquisition
PSYC 561 (3) Methods: Developmental Psycholinguistics
PSYC 734 (3) Developmental Psychology and Language
PSYC 735 (3) Developmental Psychology and Language
PSYC 736 (3) Developmental Psychology and Language
PSYC 737 (3) Developmental Psychology and Language
SCSD 619 (3) Phonological Development
SCSD 632 (3) Phonological Disorders: Children
SCSD 633 (3) Language Development
SCSD 637 (3) Developmental Language Disorders 1
SCSD 643 (3) Developmental Language Disorders 2
SCSD 652 (3) Advanced Research Seminar 1
SCSD 653 (3) Advanced Research Seminar 2

46.6 Courses

Students preparing to register should consult Class Schedule on the web at www.mcgill.ca/student-records/register/class-schedule for the most up-to-date list of courses available; courses may have been added, rescheduled or cancelled after this Calendar was published. Class Schedule lists courses by term and includes days, times, locations, and names of instructors.

Term(s) offered (Fall, Winter, Summer) may appear after the credit weight to indicate when a course would normally be taught. Please check Class Schedule to confirm this information.

Courses with numbers ending D1 and D2 are taught in two consecutive terms (most commonly Fall and Winter). Students must register for both the D1 and D2 components. No credit will be given unless both components (D1 and D2) are successfully completed in consecutive terms.

Note: All undergraduate courses administered by the Faculty of Arts (courses at the 100 to 500 level) have limited enrolment. The course credit weight is given in parentheses after the title.

★ Denotes courses taught only in alternate years.

Undergraduate courses

Students deficient in certain areas may be required to take some of the following undergraduate courses in addition to graduate courses:
LING 330 Phonetics
LING 331 Phonology 1
LING 360 Introduction to Semantics
LING 371 Syntax 1
LING 440 Morphology
Graduate courses currently scheduled for 2009-10:

★ LING 520 SOCIOLINGUISTICS 2. (3) (Winter) (Prerequisite: LING 320 or permission of instructor.) A seminar on variationist "micro-sociolinguistics", including a survey of the most important primary literature on sociolinguistic variation and introduction to sociolinguistic fieldwork.

★ LING 521 DIALECTOLOGY. (3) (Winter) (Prerequisites: LING 330 and LING 320.) An introduction to the theory and methods of dialectology (the study of regional variation in language) with an emphasis on connections with linguistic theory. Students will also acquire a practical knowledge of major differences among dialects of English, and will gain hands-on experience in the planning, implementation and analysis of a dialect survey.

★ LING 531 PHONOLOGY 2. (3) (Winter) (Prerequisites: LING 331 and permission of instructor.) Exploration of current issues in phonology.

LING 555 LANGUAGE ACQUISITION 2. (3) (Winter) (Prerequisites: LING 355 and LING 371 and permission of instructor) A detailed overview of recent experimental work on first language acquisition of syntax within the principles and parameters framework, concentrating on both theoretical and methodological issues.

LING 560 FORMAL METHODS IN LINGUISTICS. (3) (Fall) (Prerequisites: LING 360 and permission of instructor.) (Restriction: Not open to students who have taken MATH 240.) This course presents the formal methods used in the study of language (namely, the theories of sets, relations, functions, partial orders, and lattices, as well as the principle of mathematical induction).

LING 565 PRAGMATICS. (3) (Winter) (Prerequisites: LING 360 and PHIL 210 or permission of the instructor.) Study of the relationship between language and its contexts of use. Topics to be examined include deixis, presupposition and implicature.

LING 571 SYNTAX 2. (3) (Fall) (Prerequisite: LING 371) This course extends and refines the theory of grammar developed in LING 371, while introducing some primary literature and developments (in certain modules of the grammar such as phrase structure, wh-movement, and binding).

LING 583 SPECIAL TOPICS 4. (3) (Restriction: Not open to students who have taken LING 486) Intensive study of a selected field or topic.

LING 590 LANGUAGE ACQUISITION AND BREAKDOWN. (3) (Fall) (Prerequisites: LING 371 and either LING 355 or LING 390.) Theoretical and experimental perspectives on an imperfect language faculty, in the context of current linguistic theory and state-of-the-art experimental methods and techniques. Comparison of linguistic abilities of normally developing children, children with language disorders (e.g., SLI), and adults with disrupted linguistic abilities (e.g., aphasic patients).

LING 600 M.A. RESEARCH SEMINAR 1. (3)
LING 601 M.A. RESEARCH SEMINAR 2. (3)
LING 607 M.A. RESEARCH PAPER. (15)

LING 615 LOGIC FOR SEMANTICS. (3) (Corequisite: LING 660.) Introduction to logic as applied to natural language semantics. Basic propositional and predicate logic; with special emphasis on truth functions and models, and variable assignments.

LING 619 EXPERIMENTAL FOUNDATIONS. (3) (Winter) Foundations of the relationship between linguistic theory and experimental linguistics (language acquisition, neurolinguistics and psycholinguistics).

LING 631 PHONOLOGY 3. (3) (Fall) Foundations of phonological theory, focusing on issues in segmental and prosodic structure.

LING 635 PHONOLOGY 4. (3) (Winter) (Prerequisite: LING 631) Exploration of current topics in phonological theory.

LING 640 FUNDAMENTALS OF MORPHOLOGY. (3) (Fall) (Restriction: Not open to students who have taken LING 440) Introduction to current theoretical notions that seek to define a well-formed word structure, including headedness, morphological subcategorization, feature percolation and cyclicity.

LING 645 MORPHOLOGY: THEORY AND ANALYSIS. (3) (Prerequisite: LING 631 and LING 671 or permission of instructor.) In-depth investigation of current issues in theoretical morphology.

★ LING 651 TOPICS IN ACQUISITION OF PHONOLOGY. (3) (Prerequisites: LING 331 or LING 631 or permission of instructor.) A course in language acquisition is highly recommended.) An examination of theoretically informed work on the first language acquisition of phonology.

★ LING 655 THEORY OF L2 ACQUISITION. (3) (Winter) (Prerequisite: LING 671 or permission of instructor.) Interlanguage grammars and the role of Universal Grammar in second language acquisition.

LING 660 SEMANTICS 3. (3) (Fall) (Corequisite: LING 615.) Introduction to the basics of natural language semantics.

LING 665 SEMANTICS 4. (3) (Winter) (Prerequisite: LING 660.) Further introduction to the basics of natural language semantics.

LING 671 SYNTAX 3. (3) (Fall) In-depth overview of current issues in theoretical syntax. Emphasis will be placed on the logic and development of argumentation in syntactic theory.

LING 675 SYNTAX 4. (3) (Winter) (Prerequisite: LING 671) Continuation of LING 671.

LING 682 SELECTED TOPICS 1. (3)
LING 683 SELECTED TOPICS 2. (3) (Winter)
LING 688 TUTORIAL 1. (3) (Restriction: Permission of instructor.) Independent study of a selected field or topic.

★ LING 690 SEMINAR IN NEUROLINGUISTICS. (3) (Prerequisite: LING 671 or permission of instructor) Survey of methods and results relevant to cerebral representation of grammatical systems.

LING 701 PH.D. RESEARCH SEMINAR 1. (3) (Fall) (Restriction: Not open to students who have taken LING 700.)
LING 702 PH.D. RESEARCH SEMINAR 2. (3) (Winter)
LING 706 PH.D. EVALUATION 1. (0)
LING 707 PH.D. EVALUATION 2. (0)
LING 710 LANGUAGE ACQUISITION ISSUES 2. (2)
LING 731 ADVANCED SEMINAR IN PHONOLOGY. (3) (Prerequisite: LING 631 or permission of instructor.) (Note: Topics vary from year to year.) Current topics in phonological theory.

LING 755 ADVANCED SEMINAR: LANGUAGE ACQUISITION. (3) (Prerequisites: LING 671 and LING 555 or LING 655 or permission of instructor.) (Note: Topics vary from year to year.) Current topics in language acquisition.

LING 760 ADVANCED SEMINAR IN SEMANTICS. (3) (Prerequisite: LING 660 or permission of instructor.) (Note: Topics vary from year to year.) Current topics in semantic theory.

LING 771 ADVANCED SEMINAR IN SYNTAX. (3) (Prerequisite: LING 671 or permission of instructor.) (Note: Topics vary from year to year.) Exploration and in-depth discussion of a current topic in syntactic theory through reading and discussion of primary literature.

LING 782 SELECTED TOPICS 3. (3)
LING 783 SELECTED TOPICS 4. (3)

47 Management, Desautels Faculty of

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Dean — Peter A. Todd

Associate Dean, (Academic) — Omar Toulan
47.1 Staff

Emeritus Professors
D. Armstrong; B.A., B.Com.(Alta.), Ph.D.(McG.); Economics
J-L. Goffin; Eng., M.S.(Brussels), M.Sc., Ph.D.(Calif.); Management Science
R.N. Kanungo; B.A., M.A.(Patna), Ph.D.(McG.); Organizational Behaviour
R. Brenner; B.Sc., M.A., Ph.D.(Hebrew); Organizational Behaviour
M.-S. Jo; B.Com.(Hankuyk U., Korea), M.B.A.(Mich.), M.S.(Ill.); Management Science
R. N. Kanungo; B.A., M.A.(Patna), Ph.D.(McG.); Organizational Behaviour
J-L. Goffin; Eng., M.S.(Brussels), M.Sc., Ph.D.(Calif.); Management Science
D. Armstrong; B.A., B.Com.(Alta.), Ph.D.(McG.); Economics
R. Brenner; B.Sc., M.A., Ph.D.(Hebrew); Organizational Behaviour
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J. Jorgensen; B.A., M.A.(N. Carolina), Ph.D.(McG.); Strategy and Organization
L. Lapointe; B.A., M.Sc.(Montr.), Ph.D.(HEC); Information Systems
S. Li; M.S.(Georgia), Ph.D.(Texas); Management Science
S. Maguire; B.Sc.(Qu.), M.B.A.(Br. Col.); Strategy and Organization
K. Moore; B.Sc.(Ambassador U.), M.B.A.(S. Calif.), Ph.D.(York (Can.)); Marketing/Strategy & Organization (Part-time)
A. Mukherjee; B.Eng.(Jadavpur), M.B.A.(Indian Inst. Manag.), Ph.D.(Texas-Austin); Marketing
W. Oh; B.A.(SUNY), M.B.A.(George Washington), M.Phil., Ph.D.(Stern); Information Systems
P. Perez-Aleman; B.Sc.(Calif., Berk.), Ph.D.(MIT); Strategy and Organization
S. Ray; B.E.(Jadavpur), M.E.(Asian I.T.), Ph.D.(Wat.); Management Science
E. Sarigollu; B.A., B.M.A.(Bogazici), M.A., Ph.D.(Penn.); Marketing
S. Sarkissian; M.S.(Calif., Berk.), Ph.D.(Wash.); Finance
O. Toulou; B.Sc.(G'town), Ph.D.(MIT); Strategy and Organization
D. Vakratsas; B.Sc.(Aristotle U.), M.Sc., Ph.D.(Texas); Marketing
V. Varter; B.A., M.S.(Bogazici), Ph.D.(Bilkent); Management Science/Operations Management
G. Vit; B.Com.(McG.), M.B.A.(C'dia), Ph.D.(Bradford-UK); Strategy and Organization (Part-time)
M. Yalovsky; B.Sc., M.Sc., Ph.D.(McG.); Management Science

Associate Professors
A. Animesh; B.Com.(Delhi), M.I.S.(Carn. Mell), Ph.D.(Md.); Decision and Information Systems
S. Barlas; B.S.(Hacettepe U., Turkey), M.S.(Ill.-Urbana-Champaign), Ph.D.(Chic.); Marketing
G. Basselier; B.Com., M.Sc.(HEC); Information Systems
S. Cha; B.A., M.A., Ph.D.(Harv.); Organizational Behaviour
A. Chakrabarti; B.Sc.(Calc.), M.S.(Indian Statistical Inst.), M.Sc.(National), Ph.D.(Duke); Management
A. de Motta; B.A.(Universidad De Valencia, Spain); Finance
A. Darnev; M.A.(New Econ. School-Moscow), M.A.(Penn. St.), Ph.D.(Mich.); Finance
R. Goyenko; B.S.(Ukraine), M.A.(Budapest), M.S.(Italy), Ph.D.(Ind.); Finance
M. Gusum; B.S.(Naval Academy), M.S., Ph.D.(Calif.); Industrial Engineering and Operations Research
K. Han; B.S., M.S.(KAIST), Ph.D.(Minn.); Information Systems
E. Heaphy; B.A.(Welles.), Ph.D.(Mich.); Management and Organizations
S. Mishra; B.A., M.A.(Delhi), M.B.A., Ph.D.(Ind.); Marketing
A. Nain; B.A.(Delhi), M.Sc.(Warw.), Ph.D.(Mich.); Finance
I. Okhtamovskiy; B.A. equivalent(Moscow), M.S. equivalent(Academy of National Economy), Ph.D.(S. Calif.); Strategy
C. Payans; B.S., Ph.D.(Texas-Austin); Finance
M. Qiu; B.A.(Huazhong), M.A.(S. Fraser), Ph.D.(Alta.); Marketing
Z. Singer; B.A.(Tel-Aviv), M.B.A.(Wash.), Ph.D.(Calif.); Accounting
D. Tsang; B.Com., M.A.(Tor.), M.S., Ph.D.(Calif., Berk.); Accounting
J. Xu; B.S., M.A.(Beijing), Ph.D.(Duke); Economics
D. Zhang; B.S., M.S.(Chongqing), Ph.D.(Minn.); Industrial Engineering

Faculty Lecturers
S. Basu; B.Sc.(Calic.), M.A.(Tufts), Ph.D.(Pitt.); General Management
R. Cecere; B.Com., G.D.P.A.(McG.); Accounting
M. Chaudhury; B.A., M.A.(Dhaka), M.A.(Wat.); Ph.D.(S. Fraser); Finance
L. Chauvin; B.A. equivalent(Moscow), M.S. equivalent(Academy of National Economy), Ph.D.(S. Calif.); Strategy
C. Payans; B.S., Ph.D.(Texas-Austin); Finance
M. Qiu; B.A.(Huazhong), M.A.(S. Fraser), Ph.D.(Alta.); Marketing
Z. Singer; B.A.(Tel-Aviv), M.B.A.(Wash.), Ph.D.(Calif.); Accounting
D. Tsang; B.Com., M.A.(Tor.), M.S., Ph.D.(Calif., Berk.); Accounting
J. Xu; B.S., M.A.(Beijing), Ph.D.(Duke); Economics
D. Zhang; B.S., M.S.(Chongqing), Ph.D.(Minn.); Industrial Engineering

International Business
S. Faraj; B.S.(Wisc.), M.S.(MIT), DBA; MIS
S. Fortin; B.A. equivalent(Moscow), M.A.(Tufts), Ph.D.(Pitt.); General Management
M. Graham; M.A., M.B.A., Ph.D.(Harv.); Strategy and Organization
R. Hebdon; B.A., M.A., Ph.D.(Tor.); General Management-Industrial Relations
K. Jacobs; B.A., M.A.(Cath. U. of Louvain), Ph.D.(Pitts.); Finance
A.M. Jaeger; B.Sc.(Newwestern), M.B.A., Ph.D.(Stan.); Organizational Behaviour
M.-S. Jo; B.Com.(Hankuyk U., Korea), M.B.A.(Mich.), M.S.(Ill.), Ph.D.(Colo.); Marketing
J. Jorgensen; B.A., M.A.(N. Carolina), Ph.D.(McG.); Strategy and Organization
L. Lapointe; B.A., M.Sc.(Montr.), Ph.D.(HEC); Information Systems
S. Li; M.S.(Georgia), Ph.D.(Texas); Management Science
S. Maguire; B.Sc.(Qu.), M.B.A.(Br. Col.); Strategy and Organization
K. Moore; B.Sc.(Ambassador U.), M.B.A.(S. Calif.), Ph.D.(York (Can.)); Marketing/Strategy & Organization (Part-time)
A. Mukherjee; B.Eng.(Jadavpur), M.B.A.(Indian Inst. Manag.), Ph.D.(Texas-Austin); Marketing
W. Oh; B.A.(SUNY), M.B.A.(George Washington), M.Phil., Ph.D.(Stern); Information Systems
P. Perez-Aleman; B.Sc.(Calif., Berk.), Ph.D.(MIT); Strategy and Organization
S. Ray; B.E.(Jadavpur), M.E.(Asian I.T.), Ph.D.(Wat.); Management Science
E. Sarigollu; B.A., B.M.A.(Bogazici), M.A., Ph.D.(Penn.); Marketing
S. Sarkissian; M.S.(Calif., Berk.), Ph.D.(Wash.); Finance
O. Toulou; B.Sc.(G'town), Ph.D.(MIT); Strategy and Organization
D. Vakratsas; B.Sc.(Aristotle U.), M.Sc., Ph.D.(Texas); Marketing
V. Varter; B.A., M.S.(Bogazici), Ph.D.(Bilkent); Management Science/Operations Management
G. Vit; B.Com.(McG.), M.B.A.(C'dia), Ph.D.(Bradford-UK); Strategy and Organization (Part-time)
M. Yalovsky; B.Sc., M.Sc., Ph.D.(McG.); Management Science
McGill University offers eight programs which provide graduate-level education in management. All programs have been tailored to meet the special needs and demands of different groups of people. Before embarking on a graduate management education, students should, therefore, be aware of the different and unique features of each program, and select the one which best suits their aspirations and abilities.

1) **Master of Business Administration (M.B.A.)** may be taken on either a full-time basis (section 47.7: “M.B.A. Program Requirements”) or a part-time basis (section 47.8: “M.B.A. Part-time Studies”).

2) **Joint Executive Master of Business Administration (M.B.A.)** offered jointly with Hautes Études Commerciales (HEC) - Montreal (section 47.9: “Joint Executive M.B.A.”).

3) **Joint program: Master of Business Administration (M.B.A.) with integrated Bachelor of Civil Law (B.C.L.) / Bachelor of Laws (LL.B.)** offered in cooperation with the Faculty of Law (section 47.10.3: “Joint Program: Master of Business Administration (M.B.A.) with Integrated Bachelor of Civil Law (B.C.L.) / Bachelor of Laws (LL.B.)”).

4) **Joint program: Master of Business Administration and Medicine (M.D./M.B.A.)** offered in cooperation with the Faculty of Medicine (section 47.10.2: “M.D./M.B.A. Program”).

5) **Post-M.B.A. Certificate** intended for professional managers who wish to update their skills and/or broaden the base of their education. The certificate may be taken on a full-time or part-time basis (section 47.13: “Post-M.B.A. Certificate”).

6) **Ph.D. in Management** offered jointly by the four Montreal universities: Concordia University, École des Hautes Études Commerciales (affiliated with the Université de Montréal), McGill University, and Université du Québec à Montréal (section 47.15: “Joint Ph.D. in Management”).

7) **Master of Management – Manufacturing Management** a 12-month academic program followed by a four-month industrial internship. Offered in collaboration with a Faculty of Engineering (section 47.14.1: “Master of Management Programs (M.M.)”).

8) **Master of Management – International Master’s Program in Practising Management** (section 47.14.1: “Master of Management Programs (M.M.)”).

9) **Graduate Diploma in Public Accountancy** (section 47.14.2: “Diploma in Public Accountancy (Chartered Accountancy)”).

### 47.3 Admission Requirements

#### 47.3.1 M.B.A. Program – Admission Requirements

Applicants with strong indications of managerial potential are desired. Given below are the minimum entrance criteria. Owing to the large number of applicants to the McGill M.B.A., merely meeting the minimum requirements will not guarantee acceptance.

- **An undergraduate degree, from an approved college or university, with a Grade Point Average of at least 3.0 out of a possible 4.0, or a B average.**
- **A Graduate Management Admission Test (GMAT) is required, written within the past five years.**
- **Applicants who earned a bachelor degree outside Canada, the United States, Australia, New Zealand or the United Kingdom, are required to take the Test of English as a Foreign Language.** The TOEFL may be waived for graduates of four-year university programs whose language of instruction is English if the university is located in a non-English speaking country. Applicants who are not Canadian citizens and whose mother tongue is not English may be asked to demonstrate an English language competency beyond the submission of the TOEFL score. A minimum score of 600 for paper-based test, 250 for computer-based test, or 100 for the internet-based test with each component score not less than 20, is required.
- **Applicants may write the IELTS (International English Language Testing Systems) instead. A minimum overall band of 7.0 is required.**
- **A minimum of two years of full-time work experience, following completion of an undergraduate degree.**
- **Two letters of reference.**
- **Interview.**

#### 47.3.2 M.B.A. Part-time Studies – Admission

The McGill M.B.A. Program may also be completed on a part-time basis. This is meant to accommodate persons with full-time employment. Admission requirements are the same as in section 47.3.1: “M.B.A. Program – Admission Requirements”.

**Note:** Students studying on a part-time basis may transfer to full-time at various stages during their studies. Students wishing to do this must meet with the M.B.A. Student Advisor to review their schedule; see section 47.8.1: “Combined Full-time and Part-time Studies”.

#### 47.3.3 M.B.A. Admission – Accelerated Study Option

Candidates who hold a Bachelor of Commerce degree from a recognized North American institution with a minimum cumulative grade point average of 3.0 on a four (4) point scale and possess three or more consecutive years of full-time work experience, following completion of their undergraduate degree, may be considered for the accelerated study option. Candidates will be required to complete the core curriculum and take 10 M.B.A. complementary courses. Applicants applying for the accelerated study option must complete and return the application for accelerated study option.

#### 47.3.4 Visiting Student Admission

Visiting students are graduate students registered at another university taking a course in the Desautels Faculty of Management for credit at their home university.

**Quebec students may apply online by going to www.crepuq.qc.ca.** Visiting students from outside the province of Quebec must forward an application form and $100 fee, as well as a letter of permission from their school indicating the course(s) they are permitted to follow and an official transcript. The letter must also confirm that they are in good standing at their home university.

**Dates for Guaranteed Consideration**

For dates for guaranteed consideration, please consult the following website: www.mcgill.ca/gradapplicants/programs. Then select the appropriate program.

#### 47.4 Application Procedures

**47.4.1 M.B.A. Application Procedure**

The McGill M.B.A. full-time and part-time programs begin in September of each year.
Dates for Guaranteed Consideration
For dates for guaranteed consideration, please consult the following website: www.mcgill.ca/gradapplicants/programs. Then select the appropriate program.

Applications are reviewed on a rolling basis so that the earlier a file is complete, the sooner the applicant may expect to receive an answer. The undergraduate record, GMAT and TOEFL scores (where applicable), work experience, essay, letters of reference and interviews are the criteria used in making admission decisions. Interviews are scheduled by invitation only.

An online application form is available at www.mcgill.ca/gradapplicants/apply for use by those who wish to apply for entry to graduate studies at McGill.

All other documents are to be submitted directly to:
MBA Admissions Office
Desautels Faculty of Management
McGill University
1001 Sherbrooke Street West
Montreal, Quebec, H3A 1G5
Email: mba.mgmt@mcgill.ca
Website: www.mcgill.ca/mba

Applicants must submit the online application and arrange for the submission of:
1) a completed Personal Background Sheet;
2) duplicate official transcripts of undergraduate marks (and graduate, if any) FORWARDED DIRECTLY BY THE APPLICANT’S UNIVERSITY. For international applicants, the academic records must include: transcripts in the original language with official translations (into English), listing courses and grades for each year of study, verifying conferral of degree. These documents must bear the actual signature of the registrar and the official seal or stamp of the institution.
3) the $100 application fee (see section 47.4.2 “Application Fee Information”);
4) two letters of reference forwarded directly from individuals who have been responsible for evaluating the applicant’s managerial performance and potential;
5) the GMAT score (written within the past five years) and the TOEFL score (where applicable) forwarded directly from Pearson Vue for GMAT and the Educational Testing Service (see section 47.4.3 “GMAT and TOEFL Information”).

Please note that entrance to the McGill M.B.A. is highly competitive. It is in the applicant’s interest to apply as early as possible. Applicants can view their application status via Minerva or forward a registration deposit fee of $500 (Canadian or U.S. funds; certified cheque or money order) payable to McGill University. Two passport size photographs must also be supplied along with the confirmation form.

a) This fee is payable by a specified date stated in the letter of acceptance and a place is reserved.
b) If this fee is not paid by the date specified in the letter of acceptance, no reservation will be made.
c) The fee is applied towards the tuition fees provided that the candidate informs the Desautels Faculty of Management by the specified date that he/she will be joining the program and if he/she registers by the given date of registration.
d) The $500 fee is refundable provided the candidate informs the Faculty by the specified date that he/she does not intend to join the program for the coming academic year.
e) The $500 fee is forfeited if the candidate fails to inform the Faculty by the specified date that he/she will not be attending the program.
f) Students who are unable to begin attending classes in the first week of the first trimester will be required to defer their admission until the next admission period.

Note: International students should carefully follow all instructions sent to them when applying for their Certificate of Acceptance which is required of all students who wish to study in the Province of Quebec (see section 47.6.1 “Certificat d’acceptation (C.A.Q.)/Certificate of Acceptance”).

All of the above is clearly outlined in the letter of acceptance.

47.5 Procedure for accepting an Offer of Admission to the M.B.A. Program
Those students admitted to the M.B.A. Program should confirm their acceptance via Minerva or forward a registration deposit fee of $500 (Canadian or U.S. funds; certified cheque or money order) payable to McGill University. Two passport size photographs must also be supplied along with the confirmation form.

47.4.3 GMAT and TOEFL Information

Graduate Management Admission Test (GMAT)
The GMAT is administered by Pearson Vue. It is required of all M.B.A. applicants. The GMAT Program code for the McGill M.B.A. Program is 58 H-MN-22. Only a GMAT written within the last five years will be considered valid. GMAT test results must be sent to McGill directly from Pearson Vue; photocopies will not be accepted.

All inquiries concerning testing arrangements should be addressed to: Graduate Management Admission Council, www.mba.com.

Test of English as a Foreign Language (TOEFL)
The purpose of this test is to determine the English proficiency of non-Canadian individuals whose native language is not English. For a copy of the Bulletin of Information, write directly to the Educational Testing Service, Box 6152, Princeton, New Jersey, 08541-6151 U.S.A. or visit their website at www.toefl.org.

47.4.4 Application Procedures for other Programs
Application procedures can be found in each program’s section, as follows:
Joint Executive M.B.A., see section 47.9.
Master of Management Programs (M.M.), see section 47.14.1.
Joint Program: Master of Business Administration (M.B.A.) with Integrated Bachelor of Civil Law (B.C.L.) / Bachelor of Laws (LL.B.), see section 47.10.4.
M.D./M.B.A. Program, see section 47.10.2.
Master in Manufacturing Management, see section 47.14.1.
Post-M.B.A. Certificate, see section 47.13.
Joint Ph.D. in Management, see section 47.15.
International Master’s Programs in Practicing Management (IMPM), see section 47.14.1.
Diploma in Public Accountancy (Chartered Accountancy), see section 47.14.2.

47.5.1 Registration
All accepted candidates will receive a package outlining registration procedures as well as deadline dates for fee payment.

Candidates who fail to register during the specified registration period may do so later but will be charged a late registration fee by the University.

For more information on registration, please refer to the General Information section of the Graduate and Postdoctoral Studies Calendar.
47.5.2 Orientation

Orientation for all new M.B.A. students is held during the week before classes begin. This activity is mandatory for all incoming M.B.A. students. During this orientation, students get acquainted with other students and may form initial study groups. There is also an opportunity to meet with professors and to have various facets of the program outlined and clarified. An orientation fee is assessed to each student.

47.6 International Applicants

The University is unable to waive or defer the application fee for international students. Applications received without the application fee will not be processed.

There is no financial aid to bring international students to study in Canada. If an international applicant has been selected to receive an entrance award, it will be credited to the student fee account after registration in September. International applicants must, therefore, rely on their own financial resources to enter Canada.

The regulations governing international students working in Canada should be checked with the nearest Canadian Embassy or Consulate. Visas must also be checked.

47.6.1 Certificat d’acceptation (C.A.Q.)/ (Certificate of Acceptance)

International students should carefully follow all instructions sent to them when applying for their Certificate of Acceptance (C.A.Q.) which is required of all students who wish to study in the Province of Quebec. The M.B.A. Office is unable to help students obtain this document.

All students who are not citizens or Permanent Residents of Canada are required to obtain the necessary visa and/or Student Authorization documents prior to entering the country. Do not leave home without proper documentation. You cannot change your status from Visitor to Student in Canada.

Certificate of Acceptance from Quebec (C.A.Q.) – The process to come to Canada begins with an application for a Certificate of Acceptance from Quebec (C.A.Q.). There is a $100 processing fee for this document. Details on how and where to apply for the C.A.Q. are provided with the McGill Admissions package.

Student Authorization – Issued by Canada Immigration through a Canadian Embassy or Consulate. (There is a processing fee of $125 on all applications for Student Authorizations.)

A citizen of the United States, Greenland and/or St. Pierre-Miquelon is permitted to obtain the Student Authorization at a Port of Entry, if in possession of the C.A.Q.

Applying to McGill from within Canada (outside Quebec) – Students transferring from another Canadian institution outside Quebec to McGill should send their documents and C.A.Q. application to the Montreal address of Immigration Quebec.

Students must normalize their status with Quebec and Canada Immigration prior to attending any classes at McGill.

For further information, or if there is an emergency, contact International Student Services by telephone at 514-398-4349 during regular office hours, 09:00 to 17:00, or by email at international.students@mcgill.ca.

47.7 M.B.A. Program Requirements

Students studying on a full-time basis must complete this 51-credit program in two years; part-time students have a five-year time limit.

The first semester of the program features an integrated set of core courses with an emphasis on experiential learning. The remaining 3 semesters allow the student to specialize in a particular concentration and participate in an international exchange or complete an elective hands-on component supervised by faculty such as an internship or a practicum.

While the standard components of an M.B.A. curriculum (finance, organizational behaviour, strategy, marketing, operations) remain central to this M.B.A. program, they are combined in ways that expose students to the cross-functional realities of managing in, across and among organizations.

Required Courses (15 credits)

MGR 629 (1) Global Leadership
MGR 650 (2) Business Tools
MGR 651 (4) Managing Resources
MGR 652 (4) Value Creation
MGR 653 (4) Markets and Globalization

Complementary Courses (36 credits)

15 to 30 credits from: a choice of four concentrations of 15 credits each. Students may select a minimum of one concentration and a maximum of two.

Finance
- Global Strategy and Leadership
- Marketing
- Technology and Innovation Management

Remaining courses are chosen from 500 and 600 level offered by the Faculty.

6 credits from the following:*

BUSA 650 (6) Internship
BUSA 651 (6) Practicum

* Note: Students electing to participate in an International Exchange (12 credits of complementary courses) are exempt from BUSA 650 and BUSA 651. Two additional electives are required to complete the 51-credit requirement.

M.B.A.; Finance Concentration (15 credits)

Focusing on how firms raise capital and on the optimal allocation of capital for investments, this concentration prepares students for careers in corporate treasury functions, asset management and investment banking.

Required Courses (6 credits)

FINE 622 (3) Modern Corporate Finance
FINE 646 (3) Investments and Portfolio Management

Complementary Courses (9 credits)

9 credits selected from the following:

FINE 541 (3) Applied Investments
FINE 620 (3) Corporate Mergers
FINE 630 (3) Fixed Income Markets
FINE 635 (3) Financial Risk Management
FINE 639 (3) Derivatives and Risk Management
FINE 645 (3) Money and Capital Markets
FINE 648 (3) Applied Corporate Finance
FINE 660 (3) Global Investment Management
FINE 665 (3) Investment Strategies and Behavioural Finance
FINE 693 (3) Global Capital Markets
FINE 694 (3) International Corporate Finance

M.B.A.; Global Strategy and Leadership Concentration (15 credits)

This concentration prepares students for the challenges posed by a globalizing market place. The approach is cross-disciplinary and includes courses in strategy, organizational behaviour, and international business. Students will consider questions such as: What issues will the leaders of tomorrow face and how can they best tackle them? How to take a firm international? How to manage a multi-cultural workforce? How to launch a new venture? How to promote sustainable development? Students will develop skills valued by employers in consulting, business development, project management, and related fields.

Required Courses (6 credits)

MGPO 683 (3) International Business Policy
ORGB 685 (3) Cross Cultural Management
M.B.A.: Marketing Concentration (15 credits)
This concentration focuses on the development of skills in understanding customers and markets, creating value through products and services, evaluating the effectiveness of marketing programs, and managing customer relationships.

Required Courses (6 credits)
- MRKT 657 (3) Buyer Behaviour
- MRKT 658 (3) Marketing Research

Complementary Courses (9 credits)
- INSY 645 (3) Managing Electronic Commerce
- MRKT 652 (3) Marketing Management 2
- MRKT 654 (3) Marketing Communications
- MRKT 655 (3) Marketing Planning
- MRKT 659 (3) Advanced Business Marketing
- MRKT 690 (3) Topics in Marketing 2
- MRKT 698 (3) International Marketing Management

M.B.A.; Technology and Innovation Management Concentration (15 credits)
As technology reshapes the globe and innovations transform markets and organizations, the 21st century manager will be deeply immersed in technology and innovation management. As Information Technology is now present in more products and processes, managers need to understand the processes surrounding its strategic use and development. As manufacturing and service operations now stretch the globe, issues of logistics and supply chain integration become more important. As innovative products increasingly create and transform markets, managers must master the technology development process. This concentration provides tools, frameworks, and integration of all aspects of organizational operations, supply chain, IT processes and innovation management. Students following this concentration will be uniquely qualified to take jobs in new product development, IT strategy, operations and supply chain management, and technology consulting. A unique aspect of the concentration is the capstone project course where students work on solving a real-life technology innovation problem.

Required Courses (6 credits)
- INSY 606 (3) Technology Management
- MGSC 616 (3) Technology in Action

Complementary Courses (9 credits)
- INSY 607 (3) Technology Consulting
- INSY 608 (3) Winning with IT
- INSY 609 (3) Technology Project Management
- INSY 633 (3) IT Knowledge Management
- INSY 645 (3) Managing Electronic Commerce
- MGPO 650 (3) Managing Innovation
- MGSC 602 (3) Strategic Management of Operations
- MGSC 603 (3) Logistics Management
- MGSC 605 (3) Total Quality Management
- MGSC 615 (3) Procurement and Distribution
- ORGB 625 (3) Managing Organizational Change

M.B.A.- International Exchange Program
The E.M.B.A. program is designed both to teach new managerial tools as well as to allow managers to take a step back from the tools and understand their strengths and limitations. It also aims at presenting different models of management and is designed to meet the training needs of managers who currently hold, or who will hold in the future, senior management positions.

Required Courses (45 credits)
McGill University courses (33 credits)
- BUSA 642 (4) Reflective Dimension Manager Role
- BUSA 643 (4) Collaborative Dimension Manager
- BUSA 644 (4) Analytic Dimension of Manager Role
- BUSA 645 (4) Worldly Dimension of Manager Role
- BUSA 665 (5) Managing Change
- BUSA 689 (12) Integrative Project
- HEC Montréal courses (12 credits)
- MHEC 600 (4) Création de valeur
- MHEC 601 (4) Excellence opérationnelle
- MHEC 602 (4) Outils et pratiques de gestion

Additional Special Programs
The following special programs are also available:

47.8 M.B.A. Part-time Studies
The course requirements for students completing their degree on a part-time basis are identical to those studying full-time. Students will follow a lockstep program, which will allow for completion of the core courses during the first year of study. Students must then take the number of courses required towards a concentration, electives and one of the experiential components as best suits their schedule. Students may also take elective courses in the Summer terms provided they have the necessary prerequisites. A limit of 5 years is permitted to complete the degree requirements.

47.8.1 Combined Full-time and Part-time Studies
There are two options by which students may combine full-time and part-time studies.

Option 1
Upon completion of the entire first year of core courses on a part-time basis, students may request a status change to full-time to complete the remaining requirements as full-time students.

Option 2
Upon completion of the core requirements on a full-time basis, students may request a status change to part-time to complete the degree requirements.

Students wishing to change their status to full-time must make a written request at least four weeks prior to the beginning of the relevant term. These requests should be sent to the M.B.A. Student Advisor.

47.9 Joint Executive M.B.A.
The E.M.B.A. program is designed both to teach new managerial tools as well as to allow managers to take a step back from the tools and understand their strengths and limitations. It also aims at presenting different models of management and is designed to meet the training needs of managers who currently hold, or who will hold in the future, senior management positions.

Required Courses (45 credits)
McGill University courses (33 credits)
- BUSA 642 (4) Reflective Dimension Manager Role
- BUSA 643 (4) Collaborative Dimension Manager
- BUSA 644 (4) Analytic Dimension of Manager Role
- BUSA 645 (4) Worldly Dimension of Manager Role
- BUSA 665 (5) Managing Change
- BUSA 689 (12) Integrative Project
- HEC Montréal courses (12 credits)
- MHEC 600 (4) Création de valeur
- MHEC 601 (4) Excellence opérationnelle
- MHEC 602 (4) Outils et pratiques de gestion

47.10 Additional M.B.A. Programs
The following special programs are also available:

47.10.1 M.B.A. International Exchange Program
Through the McGill M.B.A. Exchange Program there are exciting opportunities to study abroad.
Participation in the program gives McGill students the opportunity to spend part of their M.B.A. studying at a business school abroad. Students successfully completing the program's requirements receive both the master's degree from their home university and an International Management Certificate from the foreign institution which they attended. McGill is part of the Program in International Management (PIM), a consortium of the leading business schools in North America, South America, Europe, and Asia. There are exchanges with both PIM and non-PIM schools.
47.10.3 M.B.A./Japan

This two-year M.B.A. program – delivered by McGill faculty at the campus of the prestigious Sophia University in downtown Tokyo, Japan – provides local students with a world-class North American style graduate business education in International Business or Finance while maintaining full-time employment. For more information visit our website at www.mcgillmbajapan.com.

47.10.4 Joint Program: Master of Business Administration (M.B.A.) with Integrated Bachelor of Civil Law (B.C.L.) / Bachelor of Laws (LL.B.)

Students wishing information on the Law program should contact:
Faculty of Law, Admissions Office,
3544 Peel Street,
Montreal, Quebec, H3A 1W9
Telephone: 514-398-6666
Email: undergradadmissions.law@mcgill.ca

Dates for Guaranteed Consideration

For dates for guaranteed consideration, please consult the following website: www.mcgill.ca/gradapplicants/programs. Then select the appropriate program.

A joint Master of Business Administration (M.B.A.) with integrated Bachelor of Civil Law (B.C.L.) and Bachelor of Laws (LL.B.) program is offered by the Desautels Faculty of Management and the Faculty of Law. This joint program provides students the opportunity to pursue legal and administrative aspects of business. Successful candidates graduate with M.B.A., B.C.L. and LL.B. degrees, a trio that prepares them for careers in private and public enterprise, as well as government service.

Students complete 45 credits for the M.B.A. degree and 93 credits for the integrated B.C.L. and LL.B. degrees for a total of 138 credits.

Required – Management (18 credits)

BUSA 646 (3) Health Management Capstone
BUSA 650 (6) Internship
BUSA 698 (3) Health Care Systems
BUSA 699 (3) Health Care Management

Elective Courses (15 credits)

Remaining courses chosen from 500- and 600-level courses offered by the Desautels Faculty of Management, and approved by the M.D./M.B.A.

Note: Students may have to follow one or all components of the M.B.A. Base Camp (Statistics, Math for Finance, Financial Accounting) prior to commencement of the M.B.A. depending on their academic background.

47.10.2 M.D./M.B.A. Program

The M.D./M.B.A. program recognizes that there is an increasing demand in the healthcare sector for physicians with management skills and expertise. This is a five-year program in which the first year is spent in the Desautels Faculty of Management completing the M.B.A. core as well as building a solid background in health-care management. Then, the students will begin their medical studies, which will be integrated with additional elective courses in management. This will provide opportunity to train well-rounded physician-managers who can eventually pursue interesting careers in a wide range of healthcare facilities, from the smallest clinic to the largest tertiary health care facility, from research laboratory to university or hospital medical departments. Our graduates will also have career opportunities in the health insurance sector, which is a significant layer of the healthcare system in a number of countries including the United States.

Upon graduation, students receive an M.B.A. from the Desautels Faculty of Management and M.D., C.M. degrees from the Faculty of Medicine.

Dates for Guaranteed Consideration

For dates for guaranteed consideration, please consult the following website: www.mcgill.ca/gradapplicants/programs. Then select the appropriate program.

Following the evaluation of the complete application package, selected candidates are invited to interviews, after which final admissions decisions are made.

Program Administrator M.D./M.B.A. Program,
McGill School of Medicine, 3655 Promenade Sir-William-Osler,
Montreal, QC H3G 1Y6
Telephone: 514-398-3595
Fax: 514-398-3595

Required Courses (30 credits)

MGCR 629 (1) Global Leadership
MGCR 650 (2) Business Tools
MGCR 651 (4) Managing Resources
MGCR 652 (4) Value Creation
MGCR 653 (4) Markets and Globalization
Students must take at least 3 credits from the following courses related to social diversity and human rights:

- CMPL 500 (3) Aboriginal Peoples and the Law
- CMPL 504 (3) Feminist Legal Theory
- CMPL 511 (3) Social Diversity and Law

Complementary – Law, Other Courses (27 credits)

Students select the remaining 27 credits from among Faculty of Law offerings.

47.11 Policies and Regulations of the M.B.A.

(Full-time)

The following is a brief overview of the rules and regulations of the M.B.A. program. All attending students will be given a copy of the "Official Rules and Regulations" from the M.B.A. office. Students are responsible for reading and abiding by these rules and regulations.

The McGill M.B.A. (full-time) is designed as a two-year program. The academic year begins in September and ends in May. Students admitted to the Accelerated Study Option may complete the program in a shorter period of time.

47.11.1 Withdrawal from the M.B.A. Program

Students wishing to withdraw from the McGill M.B.A. program must complete a "Withdrawal Form" available from the M.B.A. office. Students will not be considered as officially withdrawn until this form is completed. Students who drop out of the program but do not complete this form will be billed for the full tuition. Refer to the General Information section of the Graduate and Postdoctoral Studies Calendar for further information. The form is available at www.mcgill.cagps/students/registration/forms.

47.11.2 Grading and Promotion Standards

The pass mark for each course is B- (65%).

Failures

Students are permitted one failure in the M.B.A. Program. Any subsequent failure, including an unsuccessful supplemental examination, will result in the student being asked to withdraw from the M.B.A. Program.

47.11.3 Outside Elective Courses

An outside elective is any course which is not part of the M.B.A. program. This includes courses in other faculties within McGill University or outside McGill University.

Students wishing to take an elective offered in another department at McGill must first obtain approval from the Program Director. Once approval is obtained, students must obtain permission from the department offering the course before registering for the elective with their Faculty.

All Quebec universities have agreed to permit transfer of academic credit and fees among themselves up to a maximum of two courses (6 credits) in any one year. However, this agreement (for Canadians and Permanent Residents) includes only those courses not offered at the home university and which fit into the student's program. Authorization for an M.B.A. student to transfer courses must be obtained from the Director.

There are, however, limitations to the number of courses an M.B.A. student can take outside the Desautels Faculty of Management during the M.B.A. program:

a) Students completing a 51-credit program may take 15 credits maximum outside the Desautels Faculty of Management. This does not include courses offered by other faculties at McGill.
b) Students may not take courses outside the Faculty if they are offered within the Faculty unless there are exceptional circumstances.

c) Students may not take language courses as credit toward the M.B.A.

47.12 M.B.A. Courses

Students preparing to register should consult Class Schedule on the web at www.mcgill.ca/student-records/register/class-schedule for the most up-to-date list of courses available; courses may have been added, rescheduled or cancelled after this Calendar was published. Class Schedule lists courses by term and includes days, times, locations, and names of instructors.

Single term and Multi-term Courses (D1/D2, N1/N2, J1/J2/J3)
The same course may be available as a single term offering and also as a multi-term offering. The course content and credit weight is equivalent in all modes; the only difference being the scheduling.

47.12.1 Core M.B.A.: Course Descriptions

MGCR 629 GLOBAL LEADERSHIP. (1) An introduction to the leadership challenges of the 21st century in a rapidly changing global environment at the intersection of business and society.

MGCR 650 BUSINESS TOOLS. (2) (Intensive course: 13 hours per week for 2 weeks, for a total of 26 contact hours.) An introduction to the practical usage of standard business tools and frameworks.

MGCR 651 MANAGING RESOURCES. (4) (Prerequisite: MGCR 650.) (Intensive course: 7.5 hours per week, over 7 weeks for a total of 52 contact hours.) An introduction to the challenges of acquiring and developing various resources in the firm, including financial capital, human talent, and information technology.

MGCR 652 VALUE CREATION. (4) (Prerequisite: MGCR 650.) (Intensive course: 7.5 hours per week, over 7 weeks for a total of 52 contact hours.) Offers a comprehensive overview of the value creation process in business sectors by exploring the inter-relationships among the partners in the value chain.

MGCR 653 MARKETS AND GLOBALIZATION. (4) (Intensive course: 13 hours per week over 4 weeks for a total of 52 contact hours.) A review of macro-environment in which firms compete, and the linkages which exist between the domestic and global economies. Topics such as trade, fiscal and monetary policy, interest rates, exchange rates, and balance of payments will be covered.

47.12.2 M.B.A. Elective/Concentration Course Descriptions

ACCT 618 FINANCIAL REPORTING: STRUCTURE & ANALYSIS. (3) An in-depth analysis of corporate financial reporting principles and practices, with emphasis on developing the abilities of the student to discriminate between the form and substance of corporate financial reports. Analysis of all components of the financial statements with the effect of reference to alternative practices on financial reports.

ACCT 619 FINANCIAL REPORTING: VALUATION. (3) Analysis of financial statements and their uses. A financial statement analysis framework will be developed and applied to: (1) development of business and securities valuations, (2) the prediction of bankruptcy, (3) the strategic planning process, (4) the interpretation of consolidated financial statements.

ACCT 622 INTERMEDIATE FINANCIAL REPORTING 1. (3) (Prerequisite: MGCR 611) Theoretical foundation for financial reporting concepts such as asset measurement, revenue recognition and disclosure of financial information.

ACCT 623 INTERMEDIATE FINANCIAL REPORTING 2. (3) (Prerequisite: ACCT 622.) Theoretical foundation for financial reporting concepts such as liability and equity measurement, intercorporate investments.

ACCT 624 MANAGEMENT ACCOUNTING: PLANNING & CONTROL. (3) (Prerequisite: MGCR 611) Preparation and analysis of management accounting information, effective design and implementation of management accounting systems.

ACCT 625 CANADIAN TAXATION. (3) (Prerequisite: MGCR 611.) An overview of the income tax system; emphasis on its impact on selected business decisions. Topics include: individual and corporate taxation, tax shelters, tax planning and international operations.

BUSA 615 GLOBAL COMPETITIVENESS. (3) Review of theories and practical case applications on the dynamics of global competitiveness; study of how countries develop and sustain competitive advantage in the rapidly expanding global economy; in-depth analysis by groups of the evolution and status of world competitiveness in selected countries.

BUSA 625 ASIA/PACIFIC MANAGEMENT. (3) An in-depth study of business relationships and management practices in the world's most dynamic region. Principal focus is on the dominant Asian economy, Japan, with discussion also of China, Korea and ASEAN countries. Emphasis is placed throughout on underlying cultural differences and how they influence the ways in which organizations are managed. The course is built on a variety of readings, case studies, reports and films in a seminar format emphasizing interaction between students, professor, and invited guest speakers.

BUSA 626 INTERNATIONAL BUSINESS LAW. (3) Introduction to the law regulating international business. The world's three main legal systems and procedure of civil trials before their courts. The main business organizations used in world trade. Forms and documentation of various types of foreign trade contracts. Conflict avoidance, arbitration and international transaction litigation. Specific analysis of trade terms, international commercial transactions (export sales, marketing through distributors, licensing) and international conventions (tax treaties, international and intellectual property, GATT, etc.).

BUSA 627 NORTH AMERICA: GLOBAL MARKETS. (3) As trade barriers diminish and worldwide communications expand, North America can no longer consider itself an isolated haven of prosperity. But it is still one of the current "triad" of economic powers, centred on the dominating strength of the United States. This course focuses on how the other two North American nations, Canada and Mexico, are adjusting to the realities of global competitiveness and to the often overwhelming regional role of the United States. The evolution of NAFTA and the possible next steps in trade accords are examined, as are continuing efforts to preserve elements of meaningful national autonomy in a rapidly changing global marketplace.

BUSA 640 LAUNCHING NEW VENTURES. (3) Application of the knowledge acquired in graduate business education to the launching of a new product or service through venture capital funding.

BUSA 664 CREATING THE SMALL BUSINESS. (3) Focusing on the strategies and operating policies of small business enterprises, the course is designed for individuals who are considering entrepreneurial careers either as owners or managers. Provides a practical approach to the many problems likely to be encountered in the evolving life cycle of the small business.

BUSA 665 MANAGING THE SMALL ENTERPRISE. (3) The course is designed to teach students the concepts of entrepreneurship and the fundamentals of managing small businesses. It will explore, within the context of small entrepreneurial companies, the various interactions between financing, accounting, marketing, strategic planning, operations and human resources.

BUSA 690 TOPICS IN MANAGEMENT 1. (3) Topic: Strategy in Context

BUSA 691 TOPICS IN MANAGEMENT 2. (3) Current topics in management.

BUSA 692 TOPICS IN MANAGEMENT 3. (3) Current topics in management.
BUSA 697 EUROPEAN ECONOMY AND MANAGEMENT. (3) Overview of current social, economic and business developments in Europe; examination of cultures, practices and institutional arrangements underpinning business in both the EU and Eastern Europe; opportunities and challenges in conducting business in Europe.

BUSA 698 HEALTH CARE SYSTEMS. (3) Overview and study of the Quebec, Canadian and international health care systems within the Canadian context. Brief historical overview and analysis of its major elements: Quebec Ministry of Social Affairs, Regional Health Councils, Social Service Centres, hospitals, etc. Critical issues examined: planning health care needs and resources, financing health care, labour relations, patterns of power and assessing quality of care.

BUSA 699 HEALTH CARE MANAGEMENT. (3) Course is divided into hospital goals and priorities; the basic elements and functioning of administrative and medical organization structure; the complexity of hospital management; assessment of overall as well as departmental performance. Course material, approach and assignments are strongly practice-oriented.

FINE 541D1 (1.5), FINE 541D2 (1.5) APPLIED INVESTMENTS. (Prerequisite: MGT 341) Students must register for both FINE 541D1 and FINE 541D2. (No credit will be given for this course unless both FINE 541D1 and FINE 541D2 are successfully completed in consecutive terms) (FINE 541D1 and FINE 541D2 together are equivalent to FINE 541) Students are exposed to practical aspects of managing investment portfolios. A principal activity of students is participation in the management of a substantial investment fund.

FINE 547 ADVANCED FINANCE SEMINAR. (3) (Prerequisite: MGCR 651 Managing Resources.) (Corequisites: FINE 646 and FINE 622.) (Restriction: Not open to students who have taken FINE 647.) (Note: Lectures for this course span both the Fall and Winter terms.) Selected topics will be discussed by Faculty members, invited guest speakers, and the students. Each student is required to select a topic for study and prepare a written report for presentation.

FINE 620 CORPORATE MERGERS. (3) (Prerequisite: FINE 622.) (Restriction: M.B.A. students only.) (Note: This course requires advance preparation based on each new case study presented each week.) This course deals with the rationale, structuring, shareholder value creation, financial implications and management of corporate joint ventures, alliances, mergers and acquisitions, including discussion of the external and internal reasons for these alliances and combinations and the steps taken to create structure and value and then to manage their implementation.

FINE 621 RESTRUCTURING TO CREATE SHAREHOLDER VALUE. (3) (Prerequisite: FINE 622.) (Restriction: M.B.A. students only.) (Note: Students require a good grounding in the use of financial information, ratios and finance concepts such as the cost of capital and discounted cash flow.) Methods of creating and measuring value for the shareholders of a business, emphasizing the practical use of valuation in the context of making business decisions.

FINE 630 FIXED INCOME MARKETS. (3) (Prerequisite: FINE 646.) Fixed income securities and their uses for financial engineering as well as risk management at both the trading desk and the aggregate firm level. This will involve a treatment of basic fixed income mathematics, risk management concepts, term structure modeling, derivatives valuation theory and credit risk analysis.

FINE 635 FINANCIAL RISK MANAGEMENT. (3) (Prerequisite: FINE 646.) Latest techniques of market risk management including volatility and correlation modeling, extreme value theory, Monte Carlo simulation, historical simulation and filtered historical simulation. Option pricing with time varying volatility and option risk management. Backtesting and Stress testing.

FINE 639 DERIVATIVES AND RISK MANAGEMENT. (3) (Prerequisite: MGCR 651) This course studies the field of investments related to options and futures. The course will concentrate on trading strategies and analytical models for valuing options and futures contacts.

FINE 645 MONEY AND CAPITAL MARKETS. (3) (Prerequisite: MGCR 651.) Demand for and supply of money and other financial instruments by and to banks and near banks. Simple analytical models integrating the Canadian Institutional aspects. The role of the banking sector in the money creation process. International aspects of monetary policy.

FINE 646 INVESTMENTS AND PORTFOLIO MANAGEMENT. (3) (Prerequisite: MGCR-651 Managing Resources.) The prime objective is to provide the student with a rational framework for investment. The portfolio and capital market theory of FINE 650 is extended and the empirical evidence supporting these and competing hypotheses is investigated for both individual securities and portfolios.

FINE 648 APPLIED CORPORATE FINANCE. (3) (Prerequisite: FINE 622 Modern Corporate Finance.) Concepts and techniques developed in earlier courses are extended and/or applied to problems faced by managers in Corporate Finance. Such problems include: working capital management, capital budgeting, capital structure, dividend policy, cost of capital and mergers and acquisitions.

Stresses the application of theory and techniques and extensive use is made of case studies.

FINE 660 GLOBAL INVESTMENT MANAGEMENT. (3) (Prerequisite: FINE 646 - Investments and Portfolio Management.) Primary focus will be on global investments. The course will deal with the theoretical foundations of modern international portfolio theory and empirical evidence in a real world setting. It will span the developed markets of Europe and Japan, NICs of the Pacific rim and emerging markets. The primary objective is to prepare a new generation of managers who can operate effectively in the new global investment environment.

FINE 665 INVESTMENT STRATEGIES AND BEHAVIOURAL FINANCE. (3) (Prerequisite: FINE 646 - Investments and Portfolio Management.) (Restriction: M.B.A. students only.) (Note: This course requires usage of various financial databases.) To gain understanding of the interaction between fundamental and behavioral approaches in explaining financial market dynamics, investment strategies and performance.

FINE 690 TOPICS IN FINANCE 1. (3) Topic: Alternative Investments
FINE 691 TOPICS IN FINANCE 2. (3) Current topics in finance.
FINE 692 TOPICS IN FINANCE 3. (3) Topics in finance.

FINE 693 GLOBAL CAPITAL MARKETS. (3) (Prerequisite: MGCR 651 Managing Resources.) The international financial environment as it affects the multinational manager. In-depth study of the various balance of payment concepts, adjustment of the external balance, and the international monetary system will be followed by a review of theory and institutional aspects of the foreign exchange and the international (Eurodollar) markets.

FINE 694 INTERNATIONAL CORPORATE FINANCE. (3) (Prerequisite: FINE-622 Modern Corporate Finance.) Focus on the operational problems of financial management in the multinational enterprise: financing of international trade, determining the firm's exposure to foreign exchange rate changes, protection against exchange losses, international capital budgeting, multinational cost of capital, working capital management and international portfolio diversification.

INDR 603 INDUSTRIAL RELATIONS. (3) (Due to the intensive nature of this course, the standard add/drop and withdrawal deadlines do not apply. Add/drop is the second lecture day and withdrawal is the fourth lecture day.) The goal of this course is to develop student's understanding of law, institutions, current practices, and power relations affecting the workplace. Topics include: regulation of employment, relationships in the unionized and nonunionized sectors, managerial approaches to labour relations, collective bargaining, union organizing, negotiation of collective agreements, dispute resolution and grievance procedures.
INDR 604 COLLECTIVE BARGAINING IN THEORY AND PRACTICE. (3) Theory, structure and activity of collective bargaining and arbitration as practiced in Canada and the Western industrial societies in general: how collective bargaining works; why it does or sometimes doesn't work. Emphasis on the realities of actual practice. Contract structure, grievance and arbitration procedures and bargaining practices, including costing of contracts.

INDR 605 ROLE OF GOVERNMENT: LABOUR RELATIONS. (3) Role of government, both as legislator and as employer. Development of public policy toward industrial relations and collective bargaining in the private and public sectors as well as other government policies that affect employment and industrial relations. The private sector model of collective bargaining and the peculiarities of public employment.

INDR 633 CREATING WEALTH AND PROSPERITY. (3) The objective of the course is to show the similarities and differences between the ways governments can create prosperity, and the ways companies can create wealth. The first part of the course covers topics in economic policy (what makes some countries, regions prosper and others fall behind), the second part covers financial, managerial and strategic topics companies face (what makes their market value increase and what makes this value diminish).

INSY 605 SYSTEMS ANALYSIS AND MODELLING. (3) Techniques for conducting systems requirements analysis and project management using structured analysis for specifying both manual and automated systems. Focuses on the role of the analyst in investigating the current organizational environment, defining information system requirements, working with technical and non-technical staff, and making recommendations for system improvement. Analysis project.

INSY 633 IT KNOWLEDGE MANAGEMENT. (3) Types of organizational knowledge and their value for organizations, analysing knowledge processes, and assessing tools and technologies for managing knowledge.

INSY 636 INFORMATION SYSTEMS ADMINISTRATION. (3) This course covers the issues relating to managing information systems resources. A combination of lecture and class discussions covers topics such as the role of the Information Systems department within the corporation, staff organization and leadership, strategic systems, planning, end user computing, and other areas of importance to information systems managers.

INSY 638 DATA & DATABASE MANAGEMENT. (3) Focus on the management of organizational data and database management systems. Practice in database design. Examination of different models of representing data with emphasis on the relational model.

INSY 645 MANAGING ELECTRONIC COMMERCE. (3) This course will provide students with an understanding of e-commerce. The most important concepts, models, tools and applications related to e-commerce will be studied. The primary objective of the course is to explore the knowledge and the skills that an IS professional should develop to face this new reality in business organizations.

INSY 690 TOPICS IN MANAGEMENT INFORMATION SYSTEMS 1. (3) Current topics in management information systems.

INSY 691 TOPICS IN MANAGEMENT INFORMATION SYSTEMS 2. (3) Current topics in management information systems.

INSY 692 TOPICS IN MANAGEMENT INFORMATION SYSTEMS 3. (3) Current topics in management information systems.

MGCR 610 RESEARCH PAPER. (6) The process and problems of independent research. Choice of topic may be a normative or descriptive study based on primary or secondary data. Opportunity to work on a one-to-one basis with a faculty member. Members of the Montreal business community may act as resource consultants.

MGPO 615 CONSULTING FOR CHANGE. (3) (Prerequisite: M.B.A.1) Consultation in the area of assisting firms to introduce strategic change including approaches that are used to assess, understand and advise firms whose status quo is no longer considered satisfactory.

MGPO 630 MANAGING STRATEGY. (3) This course examines the organizational issues associated with strategic change. It focuses on how managers can orchestrate organizational changes in order to realize strategic intentions and exploit environmental opportunities. Students examine how the strategic change in process works and how to tackle key strategic transitions faced by organizations.

MGPO 637 CASES IN COMPETITIVE STRATEGY. (3) The course applies the techniques for analyzing industries to a number of industries (electronics, photocopy, bicycles, chain saws, securities, fibre optics) through the use of specific company cases. The objective is to develop skills and techniques in a competitive environment and define competitive strategies through practical application.

MGPO 638 MANAGING ORGANIZATIONAL POLITICS. (3) The course examines how organization politics impacts on the individual and how the individual can impact on the political system. We draw on some of the classic works on power, politics, decision making, and bureaucracy. We then apply the concepts derived from the theory to explicit organizational situations, to develop practical frameworks that will help and benefit the student.

MGPO 640 STRATEGIES FOR SUSTAINABLE DEVELOPMENT. (3) This course aims to produce new knowledge about the multidimensional nature of sustainable development; develop skills required to formulate and implement policies that integrate economic progress with quality of life and the preservation of the biosphere.

MGPO 650 MANAGING INNOVATION. (3) To survive competitively, many organizations need to develop new products successfully and consistently, yet established firms often face difficulties responding to new opportunities. This course examines the strategic, organizational, and interdepartmental aspects of the new product development process to understand why problems occur and what managers can do about them. Topic areas include (1) the creative synthesis of market possibilities with technological potential; (2) the collaborative coordination of diverse functions in the firm; and (3) the strategic connection between the project and the firm's strategy and structure.

MGPO 651 STRATEGIC MANAGEMENT: DEVELOPING COUNTRIES. (3) The course examines strategic management challenges in developing countries using lectures and discussion of readings and cases. Topics include economic policy management (national development strategies, structural adjustment, privatization), economic cost/benefit analysis, technology choice and transfer, negotiations between multinational firms and host governments, and strategic management for public enterprise, family-owned firms, economic groups, and developmental organizations.

MGPO 669 MANAGING GLOBALIZATION. (3) M.B.A.s need to understand the processes of globalization, from small U.S. and Canadian firms beginning to explore internationally to large multinationals that are managing investments around the world.

MGPO 683 INTERNATIONAL BUSINESS POLICY. (3) Development and application of conceptual approaches to general management policy and strategy formulation in multinational enterprises. Alternative forms of international business involvement (licenses, contractual arrangements, turnkey projects, joint ventures, full direct investment); formulation and implementation of international, multinational and transnational competitive strategies; technology transfer; ownership strategy; international collaborative arrangements. A combination of conceptual readings and applied case analyses.

MRKT 652 MARKETING MANAGEMENT 2. (3) Its orientation is one of decision making and problem solving. Focuses on the decision areas of marketing management. Emphasizes the application of marketing theory, concepts and methods to the solution of real life marketing problems.

MRKT 654 MARKETING COMMUNICATIONS. (3) The design and implementation of advertising and promotions. Draws on theories of persuasion to develop a managerially oriented decision making framework. Links the framework to decisions pertaining to creative strategy, media planning, consumer promotions and trade promotions. Examines the role of media in retailing.

MRKT 655 MARKETING PLANNING. (3) The design and implementation of marketing plans. Emphasis on management decision-making; approaches and techniques for formulating marketing objectives; identifying alternate strategies; preparing the marketing plan; implementing and controlling the plan.

MRKT 657 BUYER BEHAVIOUR. (3) Research approaches focusing on the behaviour of the consumer in the market place. Intended to sensitize the students to human behaviour in general so they may carry their understanding of basic processes over to the more specific area of the consumer.

MRKT 658 MARKETING RESEARCH. (3) The basic problems of searching for additional information for better marketing decisions. Designed from the marketing manager's point of view. Placed in a cost-benefit perspective. All steps of the research process (problem definition, data collection methods, sample design, etc.) are covered.

MRKT 659 ADVANCED BUSINESS MARKETING. (3) Advanced decision-making and management of the marketing effort in a business to business (b-to-b) context, including the b-to-b marketing system; segmentation; customer relationship management; products, services, price, distribution, selling and advertising decisions; strategies for business markets and both electronic and traditional approaches to each.

MRKT 690 TOPICS IN MARKETING 2. (3) Topic: Winning at Brands Current topics in marketing.

MRKT 691 TOPICS IN MARKETING 3. (3) Current topics in marketing.

MRKT 692 TOPICS IN MARKETING 4. (3) Current topics in marketing.

MRKT 698 INTERNATIONAL MARKETING MANAGEMENT. (3) Marketing management considerations of a company seeking to extend beyond the confines of its domestic market. A review of product, pricing, channels of distribution and communications policies to extend the company's market beyond its home boundaries. The course will focus on the evolution of careers over time, and will consider in-depth the many factors which influence (and are influenced by) career development, including such things as individual characteristics and background: age and family, status; occupational, job, and organizational characteristics etc. Career development will be considered both from the perspective of the individual and the organization.

MRGB 632 MANAGING TEAMS IN ORGANIZATIONS. (3) The dynamics of group and interpersonal behaviour. As well as learning conceptual frameworks, participants will examine their own interpersonal style and behaviour in group processes.

MRGB 633 MANAGERIAL NEGOTIATIONS. (3) (Due to the intensive nature of this course, the standard add/drop and withdrawal deadlines do not apply. Add/drop is the first lecture day and withdrawal is the second lecture day.) Negotiating is a critical managerial skill. The purpose of this course is to allow students to learn to be more effective negotiators. The class environment used to accomplish this goal includes many exercises, personality inventories, and role plays. The focus of the course will be on the processes of bargaining and the emphasis is "hands on" learning, although theories of negotiation and research examining negotiation will also be covered. Each student will have a great deal of control over how much he or she will develop into a better negotiator as a result of participating in this course.

ORGB 634 CAREER DEVELOPMENT. (3) The broad objective of this course is to increase students' understanding of the phenomenon of careers, in the business world as well as other spheres. Students will be exposed to "state of the art" theory and research on careers, and will then be expected to examine the usefulness and relevance of current theory by analyzing the careers of "real life" individuals, from novels, films, biographies, and case histories. The course will focus on the evolution of careers over time, and will consider in-depth the many factors which influence (and are influenced by) career development, including such things as individual characteristics and background: age and family, status; occupational, job, and organizational characteristics etc. Career development will be considered both from the perspective of the individual and the organization.

ORGB 640 THE ART OF LEADERSHIP. (3) Influence of personality, situational and cultural factors on strategic decision making. The role of power and political behaviour in organizational life. Topics include: managerial style, superior-subordinate relationships, organizational stress, entrepreneurial behaviour patterns, power and politics in decision making.

ORGB 685 CROSS CULTURAL MANAGEMENT. (3) Cross-cultural awareness and communication skills necessary to manage in multicultural organizations. The focus of the course is on the relationship between cultural values and communication styles as they affect inter-and-intra cultural communication of managers, personnel and clients of multinational and multicultural corporations and organizations.

ORGB 690 TOPICS: ORGANIZATIONAL BEHAVIOUR. (3) (Due to the intensive nature of this course, the standard add/drop and withdrawal deadlines do not apply. Add/drop is the first lecture day and withdrawal is the second lecture day.) Topic: Leadership for Maximum Results.

47.12.3 Applicable to MBA/Japan Students ONLY:

MGCR 611 FINANCIAL ACCOUNTING. (2) The understanding and use of published financial statements as a primary source of accounting information. The concepts, conventions and techniques involved in the preparation of financial statements leading to the analysis and interpretation of this information.

MGCR 612 ORGANIZATIONAL BEHAVIOUR. (2) Overview of the many issues that influence the management of complex organizations. Understanding of individual and group attitudes, cognitions, and behaviours, providing the essential core knowledge for day-to-day managerial activity.

MGCR 613 MANAGERIAL ECONOMICS. (2) The course provides an understanding of how economic systems and markets work, a command of how concepts and models developed by economists can be used in managerial decisions, a familiarity with the more practical aspects of competitive behaviour and the structure of competition, and a good appreciation of issues arising in the development of corporate goals and strategies. The emphasis of the course is on the use of economic analysis in strategy formulation.
MGCR 614 MANAGEMENT STATISTICS. (2) The course aims to provide students with the appropriate skills that will allow them to use up-to-date statistical analysis to extract information from a set of data. The emphasis will be placed on the application and interpretation of results rather than on formal statistical theory; the challenge will be in the selection of the appropriate statistical methodology to address the problem and an understanding of the limitations of this answer. The course will fully integrate the use of statistical software with statistical analysis.

MGCR 616 MARKETING. (2) The course concentrates on what may be the most scarce resource for most corporations today - the customer. The course examines how organizations research what the customer wants and needs. The course also looks at the social and psychological backgrounds of consumer choice and looks at the methods for grouping consumers into segments according to the heterogeneity of their desires. The firm’s response to consumers is then considered. First, the need satisfying item is considered - the product. Following this, the elements of the marketing mix, distribution, pricing and promotion, are considered.

MGCR 617 OPERATIONS MANAGEMENT. (2) Change in description awaiting University approval. A comprehensive introduction to the fundamental decisions and tradeoffs associated with the management of a firm’s production and service activities will be examined. It is a study of how production and service systems can be effectively designed, utilized and managed in order for them to compete successfully on the basis of different parameters.

MGCR 618 MANAGING PEOPLE THROUGH TEAMWORK. (1) Developing competencies critical to working in teams, whether in the role of team leader or team member.

MGCR 619 RESEARCH, DEVELOPMENT AND ENGINEERING. (1) While technology per se exists in many domains of the firm, this course focuses on the research and development domain of the firm. This is an essential function - even in low-tech industries, well managed RD&E is essential because this is what provides the attributes and performance capabilities that customers desire in the products and services sold by the firm. Thus, every manager must understand how RD&E applies knowledge to achieve new performance capabilities, producing new products or services or enhancing existing ones. In addition, managers must be aware of the special and challenging issues faced by managers of this domain. Finally, managers must be aware of how they can provide a more effective link with the RD&E function.

MGCR 620 INFORMATION SYSTEMS. (2) Overview of the information systems issues that influence the management of organizations. Understanding (as opposed to computation) of the impact of information technology on firm operations and benefits and limitations of information technology, as it relates to the essential core knowledge needed for day-to-day managerial activity.

MGCR 621 INTERNATIONAL ENVIRONMENT. (2) Overview of the international issues that influence the management of organizations. Understanding of the international environment as it relates to the essential core knowledge needed for day-to-day managerial activity.

MGCR 622 ORGANIZATIONAL STRATEGY. (2) Organizational strategy concerns the process through which managers position their business or unit favourably against competitors, with customers, and in accordance with societal needs. This course emphasizes the skills that managers need to assess strategic threats and opportunities, match them with internal competencies to develop a strategy, devise action plans to realize the strategy, and continually develop capabilities to keep the organization viable.

MGCR 628 INTEGRATIVE COURSE. (6) This course provides an integrative perspective to the topics in the first year core, building on progressive stages of integrative understanding from basic management skills looking inward to basic and specialized management skills looking both inward and outward. The emphasis is on pedagogic tools which focus on a holistic view of the organization, forcing an understanding of the management of the enterprise from multiple perspectives and the resolution of conflicting viewpoints.

MGCR 628D1 (3), MGCR 628D2 (3) INTEGRATIVE COURSE. (Students must register for both MGCR 628D1 and MGCR 628D2) (No credit will be given for this course unless both MGCR 628D1 and MGCR 628D2 are successfully completed in consecutive terms) (MGCR 628D1 and MGCR 628D2 together are equivalent to MGCR 628) This course provides an integrative perspective to the topics in the first year core, building on progressive stages of integrative understanding from basic management skills looking inward to basic and specialized management skills looking both inward and outward. The emphasis is on pedagogic tools which focus on a holistic view of the organization, forcing an understanding of the management of the enterprise from multiple perspectives and the resolution of conflicting viewpoints.

MGCR 640 MANAGEMENT ACCOUNTING. (2) The use of internally generated accounting information for decision making, planning and control purposes. The concepts and techniques involved in developing and interpreting accounting information that is relevant and useful for managers.

MGCR 641 ELEMENTS OF MODERN FINANCE 1. (2) Topics: appropriate evaluation criteria for projects, risk and return; how to construct efficient portfolios; rigorous techniques for valuing financial assets. Corporate financing strategies, efficient market theories and investment banking; principles of debt financing and Modigliani-Miller propositions.

MGCR 642 ELEMENTS OF MODERN FINANCE 2. (2) Topics: asset pricing theories; organization and structure of bond markets; yield curves, term structure of interest rates; boot-strapping techniques, book vs. market pricing; concepts of duration; corporate debt market; structure and covenant features; tax effects; innovations and project finance; derivative markets; futures and forward pricing; options trading strategies.

47.13 Post-M.B.A. Certificate

The Post-M.B.A. Certificate will be awarded after the equivalent of one term of residence and the successful completion of 15 credits of M.B.A. courses. Students will be permitted to take a maximum of 15 credits.

The certificate meets the needs of two groups of professional managers: (1) managers who graduated from an M.B.A. program several years ago and would like to take a series of courses to update their skills; and, (2) managers who graduated from an M.B.A. program recently and who would like to broaden the base of their education with a selection of courses that complement their major field of studies. The certificate may be taken on a full-time or part-time basis.

The entrance requirement is an M.B.A. degree from a recognized university with a CGPA that meets the minimum requirements of Graduate and Postdoctoral Studies. Two official transcripts of marks and degree confirmations from all universities attended are required. This includes universities attended on exchange or as visiting students. For international applicants, the academic records and verifying degree conferrals must be submitted in the original language with official translations, listing courses and grades for each year of study. These documents must bear the actual signature of the registrar and the official seal or stamp of the institution.

Graduate Management Admission Test (GMAT)

The GMAT is administered by Pearson Vue. It is required of all M.B.A. applicants. The GMAT Program code for the McGill M.B.A. Program is 58 H-MN-22. Only a GMAT written within the last five years will be considered valid. GMAT test results must be sent to McGill directly from Pearson Vue; photocopies will not be accepted.

A TOEFL test is also required to determine the English proficiency of applicants whose mother tongue is not English. Applicants are additionally expected to have completed two years of full-time work experience, before submitting their application to the Post-M.B.A. program.
47.14 Other Master and Graduate Diploma Programs

47.14.1 Master of Management Programs (M.M.)

MASTER IN MANUFACTURING MANAGEMENT
(56 - 57 credits)

The Master in Manufacturing Management program (M.M.M.) is offered to students who wish to have a career as manufacturing managers. The curriculum is a balance between manufacturing and management subjects and provides exposure to industry through case studies, seminars, tours and a paid industry internship. The M.M.M. program is a 12-month academic program starting in September followed by a 4-month industrial internship. The program is a collaboration between the Faculties of Engineering and Management, which jointly grant the Master of Management degree.

Students should hold an undergraduate degree in engineering or science. Two or more years of industrial experience is preferred, but not mandatory. Students with other academic backgrounds and appropriate industrial experience will be considered, but may have to take one or two qualifying courses. The program is intended for full-time as well as part-time students. Enrolment is limited.

The M.M.M. program is a self-funded program. Tuition is $29,000.

General Business and Management – Required Courses
(11 credits)
MGCR 651 (4) Managing Resources
MGCR 652 (4) Value Creation
MGSC 608 (3) Data Decisions and Models

General Business and Management – Complementary Courses (6 credits)
6 credits from the following:
ACCT 624 (3) Management Accounting: Planning & Control
INDR 603 (3) Industrial Relations
ORB 625 (3) Managing Organizational Change
ORB 632 (3) Managing Teams in Organizations
ORB 633 (3) Managerial Negotiations
ORB 640 (3) The Art of Leadership
ORB 685 (3) Cross Cultural Management

Manufacturing and Supply Chain Operations – Required Courses (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

Manufacturing and Supply Chain – Complementary Courses (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

Discrete Manufacturing Option
MECH 528 (3) Product Design
MECH 529 (3) Discrete Manufacturing Systems

Process Manufacturing Option
CHEE 571 (3) Small Computer Applications: Chemical Engineering
CHEE 641 (4) Chemical Reaction Engineering

Industry – Required Courses (12 credits)
MECH 627 (9) Manufacturing Industrial Stage
MECH 628 (2) Manufacturing Case Studies
MECH 629 (1) Manufacturing Industrial Seminar

For more information, contact:
Program Coordinator, Mechanical Engineering
Telephone: 514-398-7201
Email: mmm.mecheng@mcgill.ca
Website: www.mcgill.ca/mmm

INTRODUCTION TO MANUFACTURING MANAGEMENT

Functioning within an authentically international context, this cooperative venture of business schools located in five different countries allows mid-career executives to study topical international business problems on site at universities in France, England, India, Japan and Canada.

For more information visit our website at www.impm.org.

IMPM – (for Health Leaders)

Applying an experience based approach to leadership development, the program will recruit practising managers and professionals throughout the health field, and from all parts of the world to learn from each other and gain a better understanding of their own leadership styles, the systems they work in, their organizational contexts, and the work relationships they must build in order to achieve change. For more information visit our website at www.mcgill.ca/imhl.

International Masters Programs in Practising Management Courses

BUSA 666 THE PRACTICE OF MANAGEMENT. (5) Examination of the philosophy, the history, and the practice of management, with introduction to personal competences necessary to carry out the complex role of general manager effectively. Latest developments in management theory and practice will be examined, in the context of the history, role of managers, and personal competence.

BUSA 668 THE VENTURE. (5) An introduction to the tools of the analytic disciplines such as managerial economics, accounting, statistics and finance. Students will apply tools to specific problems or activities within their organization, and complete an analysis that integrates these concepts and competences with a work situation.

BUSA 670 MANAGING ORGANIZATIONS. (5) Provides a basic understanding of the key processes and configurations of organizing, alternate systems and structures. Examines practical and theoretical aspects of measurement, data classification, reporting, practical analysis, cost accounting, performance measurement and forecasting.

BUSA 672 MANAGERIAL EXCHANGE. (3) A field experience that exposes the student to critical managerial challenges faced by an organization other than his/her own. Requires application of concepts, and competences.

BUSA 675 MANAGING CONTEXT. (5) Examination of the role of "outsiders," and review of the competences needed by general managers to effectively manage contextual relationships such as with government bodies, capital markets, customers and suppliers. Also, examination of cultures, emerging issues in global management, and perspectives on ethics and human rights.

BUSA 680 MANAGING PEOPLE. (5) Examination of different models of individual behaviour and of similarities and differences among them. Review of interpersonal competences, including ability to communicate, lead individuals and groups, create commitment, develop trust for strategic alliances, and coaching employees rather than directing them.

For more information visit our website at www.impm.org.

For more information visit our website at www.mcgill.ca/mmm.
BUSA 685 MANAGING CHANGE. (5) Examination of major kinds of organizational transformations that managers must deal with including starting a new business, turning around a moribund company, restructuring, downsizing, and regrouping businesses around the world. Review of new product/service development, and development of competences that help create flexible organizations.

BUSA 689 INTEGRATIVE PROJECT. (12) An examination of a major managerial issue facing their organization. Working with supervisors in weekly exchange, they will prepare a report that integrates the relevant concepts from the program to explain and/or evaluate the issue and recommend a course of action.

47.14.2 Diploma in Public Accountancy (Chartered Accountancy)
The Diploma in Public Accountancy Program is under the academic supervision of Graduate and Postdoctoral Studies, and is offered by the Desautels Faculty of Management. The faculty is made up of professionally active C.A.s with specific areas of expertise. Students benefit from a program of academic counselling, tutoring and monitoring as they progress through a program in which they are exposed to the latest concepts and practice-related issues.

Chartered Accountants play leadership roles in public practice, business, industry, government and education.

ADMISSION REQUIREMENTS
Option 1:
Students completing a bachelor's degree from a recognized institution are required to obtain a minimum CGPA of 3.0 out of 4.0*, and successfully complete the nine qualifying courses listed below, or their equivalent:

- ACCT 351 Intermediate Financial Accounting 1
- ACCT 352 Intermediate Financial Accounting 2
- ACCT 361 Intermediate Management Accounting 1
- ACCT 362 Intermediate Management Accounting 2
- ACCT 385 Principles of Taxation
- ACCT 453 Advanced Financial Accounting
- ACCT 455 Development of Accounting Thought
- ACCT 475 Principles of Auditing
- ACCT 486 Business Taxation 2

* Admission to the program is very competitive and meeting the minimum requirement does not secure admission.

Option 2:
Graduates of programs other than Bachelor of Commerce or graduates with foreign degrees must complete the following courses through the Centre for Continuing Education's Diploma in Accounting prior to admission to the Graduate Diploma program. Please note that obtaining the minimum requirements does not secure admission to the program.

- CCAU 511 Auditing 1
- CCF 511 Financial Accounting 1
- CCF 512 Financial Accounting 2
- CCF 513 Financial Accounting 3
- CCF 514 Accounting Theory and Practice
- CCTX 511 Taxation 1
- CCTX 532 Taxation 2
- CCMA 511 Management Accounting 1
- CCMA 522 Management Accounting 2

For more information, the Centre for Continuing Education can be contacted by telephone at 514-398-6161, or by email at info.coted@mcgill.ca.

ADMISSION PROCEDURES
Application forms are available online from our website.

Dates for Guaranteed Consideration
For dates for guaranteed consideration, please consult the following website: www.mcgill.ca/gradapplicants/programs. Then select the appropriate program.

1) Applicants must have an undergraduate university degree from a recognized institution.
2) All students wishing to take courses in the Diploma in Public Accountancy must complete the Application for Admission form available on the web at www.mcgill.ca/gradapplicants/apply.
3) All students must make arrangements to have two copies of the official transcripts of marks and degree confirmations from all universities attended. This includes universities attended on exchange or as visiting students. For international applicants, the academic records must include transcripts and verifying degree conferrals, in the original language as well as the official English translations.
4) An evaluation will be made granting credits in the program for equivalent courses completed (B- required) within the last five years. Academic advising is available to assist the student.
5) Applicants must have secured employment with an accredited chartered accounting firm, beginning on the October of the year for which they intend to apply.
6) Applicants who have been accepted to the program are required to make a $250 (certified cheque or money order) deposit. This fee is non-refundable and will be applied to the student’s fee account.

A deferral of admission may be considered in exceptional cases upon evidence of extenuating circumstances for one year only. A written request should be submitted to the Director of the C.A. Program. If approved, students wishing to defer their admission will be required to submit a confirmation deposit of $500 Canadian to secure a place for the following year/term. This fee is non-refundable.

TIME LIMITS
The program must be completed within three years of admission. Time limits will be adjusted accordingly for those students who are granted advanced standing or who transfer from one program to another. Students exceeding the time limits may request an extension, in writing, which may be granted under special circumstances with the approval of the Department. Where appropriate a revised program of study may be recommended.

PROFESSIONAL REQUIREMENTS FOR ADMISSION TO L’ORDRE DES COMPTABLES AGRÉÉS DU QUÉBEC (C.A.)
Membership in the Ordre des comptables agréés du Québec and the Canadian Institute of Chartered Accountants entitles Chartered Accountants to practice the profession of Chartered Accountancy.

Admission is based upon meeting the following requirements as indicated in the Chartered Accountants Act (Bill 264).

1) possession of a university degree from a recognized institution;
2) possession of the Graduate Diploma in Public Accountancy;
3) passing of the national Uniform Final Examination given by the Ordre and the CICA;
4) completion of an articling period with a firm of Chartered Accountants which is registered with the Ordre (minimum of two years), this can be done while registered in the C.A. Program;
5) a working knowledge of French;
6) Canadian citizenship or Permanent Resident status.

Further information can be obtained from: Ordre des comptables agréés du Québec, 680 Sherbrooke West, 18th floor, Montreal, Quebec, H3A 2S3. Telephone: 514-288-3256. Email: info@ocaq.qc.ca.

ADVANCED STANDING
Credit / Exemptions
An official course outline of the courses taken elsewhere, and the marks obtained, must be submitted. Students who have been granted credits and/or exemptions are not permitted to register for
the courses for which they have been granted credits and/or exemptions. Credits or exemptions will NOT be granted for courses taken more than five years before the date of application.

**PROGRAM REQUIREMENTS**

The program requires completion of nine courses (six 3-credit courses, and three 4-credit courses). It is comprised of the courses, which cover the theoretical and technical knowledge for entry-level Chartered Accountancy practitioners, and the Uniform Final Examination (C.A. exam).

**Required Courses (30 credits)**

**Summer Year 1 (May - July 15)**

- ACCT 651 (3) Performance Measurement and Reporting
- ACCT 657 (4) Governance and Control
- ACCT 659 (3) Business Analysis & Communications

**Fall Year 1**

- ACCT 655 (3) Assurance
- ACCT 683 (3) Tax Planning and Decision Making
- ACCT 660D1/D2* (6) Internship

Students in this course will work from October to April in an accredited chartered accounting firm with set deliverables of a journal and the authoring of a case.

**Winter Year 1**

- ACCT 685 (4) Engagement Management

**Summer Year 2**

- ACCT 689 (4) Business Advisory Services - Cases
- ACCT 699 (0) Uniform Final Exam Prep Seminar

Students are reminded that the courses in the Diploma in Accountancy are prerequisites to the Diploma Program in Public Accountancy courses, and knowledge of prerequisite course content is assumed.

**COURSES**

Students preparing to register should consult Class Schedule on the web at www.mcgill.ca/student-records/register/class-schedule for the most up-to-date list of courses available; courses may have been added, rescheduled or cancelled after this Calendar was published. Class Schedule lists courses by term and includes days, times, locations, and names of instructors.

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

- ACCT 651 PERFORMANCE MEASUREMENT AND REPORTING. (3) (Restriction: Entry to Program. Open only to students enrolled in the Graduate Diploma in Public Accountancy.) Entities measure and report on their performance. Divisional financial statements, balanced scorecard reporting, general-purpose financial statements, components of the management discussion and analysis in the annual report, generally accepted accounting principles.
- ACCT 655 ASSURANCE. (3) (Restriction: Entry to Program. Open only to students enrolled in the Graduate Diploma in Public Accountancy.) The role of the attest auditor. The topics covered include professional practice environment, engagement management, internal control, audit evidence, testing, reporting and general coverage of the professional services. Detailed study of the CICA Auditing recommendations, exposure drafts and guidelines. Research studies and current literature will be reviewed.
- ACCT 657 GOVERNANCE AND CONTROL. (4) (Restriction: Entry to Program. Open only to students enrolled in the Graduate Diploma in Public Accountancy.) Governance structures including internal control systems and how they relate to corporate strategy and the role of information systems within an engagement context.
- ACCT 659 BUSINESS ANALYSIS & COMMUNICATIONS. (3) (Corequisite: ACCT 651 or ACCT 657) Written and oral business communication techniques to inform and persuade others.
- ACCT 660D1 (3), ACCT 660D2 (3) INTERNSHIP. (Prerequisite(s): ACCT 651, ACCT 657, ACCT 659) (Restriction(s): Graduate Diploma in Public Accountancy students only) (Note: This course is graded as pass or fail.) Experiential on-the-job learning, focusing on pervasive qualities and skills relating to three categories of ethical behaviour and professionalism, personal attributes and skills pertaining to the creation, analysis, communication, evaluation and synthesis of information and ideas.
- ACCT 683 TAX PLANNING & DECISION MAKING. (3) (Prerequisites: ACCT 385 and ACCT 462.) (Note: Has to be taken in the last year of the program.) The theory, techniques and considerations in taxation will be addressed in a situational context. Tax planning is addressed integrating personal and corporate taxation issues. Topics such as sale of a business, rollovers and personal tax planning will be addressed.
- ACCT 685 ENGAGEMENT MANAGEMENT. (4) (Prerequisites: ACCT 655 and ACCT 659) The theoretical basis of current Canadian auditing practice. Current Canadian and International recommendations, exposure drafts, guidelines, research studies, principles and conventions, and current literature will be used to develop an understanding of the theory and to develop the ability to apply this theory in practical situations. Current issues in auditing practice will be discussed.
- ACCT 699 BUSINESS ADVISORY SERVICES - CASES. (4) (Prerequisite: completion of the other eight program courses.) Through the use of the case method, this course examines the processes and considerations used in the business advisory services area of professional practice. Complex scenarios integrate topics in financial accounting, auditing, managerial accounting, taxation and finance. Central themes such as mergers and acquisitions, litigation support, financing are addressed.
- ACCT 699 UNIFORM FINAL EXAM PREP SEMINAR. (0) (Prerequisites: ACCT 651, ACCT 655, ACCT 657, ACCT 658, ACCT 679, ACCT 681, ACCT 683, ACCT 685.) (Corequisite: ACCT 689.) This course consists of lectures and case writing relating to performance management, assurance, organizational effectiveness, information technology and finance. The cases emphasizes the application of theory to practical situations.

47.15 Joint Ph.D. in Management

The Ph.D. program in Management is offered jointly by the four Montreal universities: Concordia University, École des Hautes Études Commerciales (affiliated with the Université de Montréal), McGill University, and Université du Québec à Montréal. The program is intended to educate competent researchers and to stimulate research on management problems.

The program represents a number of innovations in doctoral work in the field of administration. First, by cooperating, the four universities are able to make available to its students a diverse pool of approximately 250 professors qualified to direct doctoral-level study and research. Second, the program has been carefully developed to encourage independent, creative work on the part of its students, with close, personal contact with the professors. This program will appeal especially to the mature, experienced candidate with relatively well-defined interests. Across the four member universities, some courses are offered in English and some in French. (All papers may, however, be written in English or French.) This is viewed as a definite advantage of the program for those students who expect to work in Canada or francophone countries after graduation.

The program places considerable emphasis on the theoretical foundations of management and its underlying disciplines. Graduates of the program are expected to have: (1) some knowledge of all the main areas of management, (2) a thorough knowledge of one applied area of management, and one support discipline, (3) a complete command of the research methodologies used in management, and (4) some familiarity with modern theories and methods of the pedagogy of management.

The program consists of three phases: preparation, specialization and dissertation.
Phase I – Preparation
The preparation phase is intended to give each student some understanding of the range of subject matter that makes up contemporary administrative theory. On entering the program, the background of each student will be assessed. Deficiencies, if any, are to be made up by graduate-level courses, papers, or assigned readings in:
- Behavioural Science
- Economics
- Operations Management
- Marketing
- Finance
- Strategy and Organization
- Accounting

Some students—notably those with strong master’s degrees in administration or related disciplines—have a minimum of work in Phase I; others require up to one academic year of work.

Phase II – Specialization
In Phase II, students probe deeply into their chosen area of specialization. With their advisory committee, students work out an individual program of study which takes about 18 months. The phase focuses on a specialization area and a support field. The specialization area could be one of the basic ones listed in Phase I (for example, marketing or operations management), a sub-area within one of these (such as organizational development within organizational behaviour), or an interdisciplinary area that combines two or more of these (such as behaviour aspects of accounting or international marketing).

The support field is selected to help the student develop a foundation of knowledge in a fundamental discipline that underlies the theory in administration. For example, a student in marketing might select psychology, sociology, or statistics. One in management policy might select political science or general systems theory or perhaps even philosophy. Other choices are possible.

Students officially enter Phase II of the program when their advisory committee has been established and, together with the student, formally agrees on a proposal for the work to be done in Phase II. Phase II must be approved by the McGill and the Joint Doctoral Committees. This includes the following:
- Doctoral seminars in the specialization area; minimum four courses.
- Any other existing graduate-level courses in the specialization area and support field deemed appropriate by the advisory committee; minimum two courses in support field.
- Seminar on Research Methodology (MGMT 707, 3 credits) or equivalent course as defined by Program Committee.
- Seminar in Pedagogy (MGMT 706, 3 credits), or Teaching and Learning in Higher Education (EDPH 689, 3 credits).
- Comprehensive Examination (MGMT 701, 0 credits).
- A publishable research paper (MGMT 720, 3 credits)*, equivalent to about 3 months of full-time work.
* Subject to approval.

The advisory committee will normally consist of at least three or four persons; a Chair and others decided upon jointly by the Chair and the student. One of these members will typically come from the support field. Every student’s advisory committee must have representation from at least two universities in the joint program.

Phase III – Dissertation
The third phase of the program consists of the dissertation in the course of which the student probes deeply into a well-defined research topic. The topic is developed with the thesis committee (at least three members), which may be the same as the Phase II advisory committee or may be reconstituted, again with representation from at least one of the other participating universities. The topic is approved formally by the thesis committee and, once the research is completed and the dissertation written, the student publicly defends the completed thesis.

47.15.1 Admission – Joint Ph.D.
Candidates normally hold a master’s-level degree, with a strong academic record from a recognized university. In rare cases, North American candidates without a related master’s degree but with exceptional backgrounds may be considered for the program.

GMAT (or GRE-General Test) results are required for applications to the doctoral program; this includes McGill master’s students applying to the Ph.D. The minimum score required is 600. Tests must have been written within the past five years.

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. Before acceptance, 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. An institutional version of TOEFL is not acceptable. Applications will not be considered if a TOEFL or IELTS test result is not available. A minimum score of 250 on the computer-based test or 100 for the internet-based test with each component score not less than 20, is required for admission. Tests must have been written within the past two years.

All documents are to be submitted directly to:

Ph.D. Program Office
Desautels Faculty of Management
McGill University
1001 Sherbrooke Street West
Montreal, QC H3A 1G5
THE UNIVERSITY OF MONTREAL, FACULTY OF MANAGEMENT

330 2009-2010 Graduate and Postdoctoral Studies, McGill University

ACADEMIC UNITS

47.15.2 Doctoral Courses

Students preparing to register should consult Class Schedule on the web at www.mcgill.ca/student-records/register/class-schedule for the most up-to-date list of courses available; courses may have been added, rescheduled or cancelled after this Calendar was published. Class Schedule lists courses by term and includes days, times, locations, and names of instructors.

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

BEHAVIOURAL SCIENCE SPECIALIZATION

ORGB 705 SEMINAR IN BEHAVIOURAL SCIENCE. (3)
ORGB 706 GROUP BEHAVIOUR AND PROCESSES. (3) Introduction to behavioural science that studies groups, including organizational teams (work teams operating in organizations) and small group phenomena.

FINANCE SPECIALIZATION

FINE 702 CONTINUOUS-TIME FINANCE. (3)
FINE 703 EMPIRICAL RESEARCH IN FINANCE. (3)
FINE 704 OPTIONS AND RISK MANAGEMENT. (3) The course covers topics in derivative pricing and financial risk management. Examples include volatility and correlation models, extreme value distributions, Monte Carlo simulation, option pricing under GARCH and stochastic volatility, option risk management using delta, gamma and full valuation, and risk model backtesting.
FINE 705 SEMINAR IN FINANCE. (3)
FINE 706 INTRODUCTORY FINANCIAL ECONOMICS. (3)
FINE 707 CORPORATE FINANCE. (3) Course will review mainly theoretical foundations, in addition to some empirical contributions to corporate finance and financial intermediation.
FINE 709 INTERNATIONAL FINANCE SEMINAR. (3) Recent advances in international finance.
FINE 710 FIXED INCOME SECURITIES THEORY. (3) Theoretical framework to deal with the analysis of fixed income securities and derivatives.
FINE 711 RESEARCH TOPICS IN FINANCIAL MARKETS DEVELOPMENT. (3) Research topics in the development of financial markets.

INFORMATION SYSTEMS SPECIALIZATION

INSY 704 ORGANIZATIONAL IMPACTS OF INFORMATION TECHNOLOGY. (3)
INSY 706 INFORMATION TECHNOLOGY ACCEPTANCE AND USAGE. (3) Individual and organizational acceptance of information technologies (IT), including how users react to the implementation of new IT.
INSY 707 STRATEGIC MANAGEMENT OF IT. (3) Strategic management of information technology and the potential use of information technology to improve organizational competitive advantage.

FINANCE SPECIALIZATION

FINANCE SPECIALIZATION

MARKETING SPECIALIZATION

MRKT 701 MODELS IN CONSUMER RESEARCH. (3)
MRKT 702 ADVANCES IN CONSUMER BEHAVIOUR. (3)
MRKT 703 ADVANCES IN SERVICES MARKETING. (3)
MRKT 705 SEMINAR IN MARKETING. (3)
MRKT 706 AUTOMATIC CONSUMER BEHAVIOUR. (3) Automatic psychological processes underlying consumer judgements and decisions.
MRKT 707 MULTILEVEL MODELLING. (3) Basic conception ideas of hierarchical linear and non-linear models, including various extensions of hierarchical models that are useful in applied work.
MRKT 708 JUDGEMENT AND DECISION MAKING. (3) Individual decision making, alternative representations of preferences and choices; as well as strategic decisions and social factors in decision making, game theory, social dilemmas, and negotiations.

OPERATIONS MANAGEMENT SPECIALIZATION

MGSC 701 DECOMP.-LRG SCALE OPTIMIZATION. (3)
MGSC 702 OPERATIONS MANAGEMENT SEMINAR. (3) Advanced research training in operations management.
MGSC 703 STOCHASTIC PROCESSES AND APPLICATIONS. (3)
MGSC 706 MANAGEMENT RESEARCH STATISTICS. (3) (Prerequisite: Permission of instructor.) Fundamental concepts, theory and methods of statistics essential to undertaking and evaluating research in the field of management.
MGSC 707 ADVANCED RESEARCH STATISTICS. (3) (Prerequisite: MGSC 706 or permission of the instructor.) Theory and methods of linear statistical models, emphasizing statistical understanding and application in management research. Topics covered include regression, analysis of variance and experimental design.
MGSC 709 MANUFACTURING SYSTEMS. (3) Manufacturing and attributes operations and the models used to design, evaluate and optimize these operations.
MGSC 710 APPLIED OPTIMIZATION. (3) Algorithmic developments in optimization and advanced software applications for modelling.

STRATEGY AND ORGANIZATION SPECIALIZATION

MGPO 701 SEMINAR IN QUALITATIVE METHODS. (3)
MGPO 702 NEW PARADIGMS: STRATEGIC MANAGEMENT. (3)
MGPO 704 ORGANIZATIONAL THEORY SEMINAR. (3)
MGPO 706 PERSPECTIVES ON INNOVATION. (3)

48 Mathematics and Statistics

Department of Mathematics and Statistics
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Chair — Jacques Hurtubise
Graduate Program Director — Georg Schmidt

48.1 Staff

Emeritus Professors
Michael Barr; A.B., Ph.D. (Penn.) (Peter Redpath Emeritus Professor of Pure Mathematics)
Marta Bunge; M.A., Ph.D. (Penn.)
Jal R. Choksi; B.A. (Cant.), Ph.D. (Manc.)
48.2 Programs Offered

The Department of Mathematics and Statistics offers programs which can be focused on applied mathematics, pure mathematics and statistics leading to master's degrees (M.A. or M.Sc.), program options in Bioinformatics and in CSE (Computational Science and Engineering). In the basic master's programs students must choose between the thesis option and the non-thesis option, which requires a project. The Bioinformatics and CSE Options require a thesis. In addition to the Ph.D. Program in Mathematics and Statistics, there is a Ph.D. option in Bioinformatics.

The department website (www.math.mcgill.ca) provides extensive information on the department and its facilities, including the research activities and the research interests of individual faculty members. It also provides detailed information, supplementary to the calendar, concerning our programs, admissions, funding of graduate students, thesis requirements, advice concerning the choice of courses, etc.

Students are urged to consult the website (www.math.uqam.ca/ISM) of the Institut des Sciences Mathématiques (ISM), which coordinates intermediate and advanced-level graduate courses among Montreal and Quebec universities. A list of courses available under the ISM auspices can be obtained from the ISM website. The ISM also offers fellowships and promotes a variety of joint academic activities greatly enhancing the mathematical environment in Montreal and in the province of Quebec.

48.3 Admission Requirements

In addition to the general Graduate and Postdoctoral Studies requirements, the Department requirements are as follows:

**Master's Degree**

The normal entrance requirement for the master's programs is a Canadian Honours degree or its equivalent, with high standing, in mathematics, or a closely related discipline in the case of applicants intending to concentrate in statistics or applied mathematics.

Applicants wishing to concentrate in pure mathematics should have a strong background in linear algebra, abstract algebra, and real and complex analysis.

Applicants wishing to concentrate in statistics should have a strong background in linear algebra and basic real analysis. A calculus-based course in probability and one in statistics are required, as well as some knowledge of computer programming.

Applicants wishing to concentrate in applied mathematics should have a strong background in most of the areas of linear algebra, analysis, differential equations, discrete mathematics and statistics leading to master's degrees (M.A. or M.Sc.), program options in Bioinformatics and in CSE (Computational Science and Engineering). In the basic master's programs students must choose between the thesis option and the non-thesis option, which requires a project. The Bioinformatics and CSE Options require a thesis. In addition to the Ph.D. Program in Mathematics and Statistics, there is a Ph.D. option in Bioinformatics.

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Applicants wishing to concentrate in statistics should have a strong background in linear algebra and basic real analysis. A calculus-based course in probability and one in statistics are required, as well as some knowledge of computer programming.

Applicants wishing to concentrate in applied mathematics should have a strong background in most of the areas of linear algebra, analysis, differential equations, discrete mathematics and numerical analysis. Some knowledge of computer programming is also desirable.

Students whose preparation is insufficient for the program they wish to enter may, exceptionally, be admitted to a Qualifying Year.
Ph.D. Degree
A master's degree with high standing is required, in addition to the requirements listed above for the master's program. Students may transfer directly from the master's program to the Ph.D. program under certain conditions. Students without a master's degree, but with exceptionally strong undergraduate training, may be admitted directly to Ph.D. 1.

48.4 Application Procedures
Online application is preferred and is available at www.mcgill.ca/gradapplicants/apply. Applicants unable to apply online can request a paper or PDF form from the department.

Applications will be considered upon receipt of:
1. application form;
2. $100 application fee;
3. two official or certified copies of transcripts;
4. two letters of reference on letterhead with original signatures;
5. one page outlining research interests and identifying possible supervisor;
6. TOEFL/IELTS tests results (if applicable);
7. applicants in pure and applied mathematics should provide a GRE score report, if available.

For more details, especially concerning items 6 and 7, please consult the website at www.math.mcgill.ca/students/graduate/application.

All information is to be submitted directly to the Graduate Program Coordinator in the Department of Mathematics and Statistics.

Dates for Guaranteed Consideration
For dates for guaranteed consideration, please consult the following website: www.mcgill.ca/gradapplicants/programs. Then select the appropriate program.

McGill's online application form for graduate program candidates is available at www.mcgill.ca/gradapplicants/apply.

48.5 Program Requirements

M.A. in Mathematics and Statistics (Non-Thesis) (45 credits)

Complementary Courses (minimum 29 credits)
At least 8 approved graduate courses, at the 500 level or above, of 3 or more credits each.

Project Component - Required (16 credits)
MATH 640 (8) Project 1
MATH 641 (8) Project 2

M.A. in Mathematics and Statistics (Thesis) (45 credits)

Complementary Courses (minimum 21 credits)
At least 6 approved graduate courses, at the 500 level or above, of 3 or more credits each.

Thesis Component – Required (24 credits)
MATH 600 (6) Master’s Thesis Research 1
MATH 601 (6) Master’s Thesis Research 2
MATH 604 (6) Master’s Thesis Research 3
MATH 605 (6) Master’s Thesis Research 4

M.Sc. in Mathematics and Statistics (Thesis) – Bioinformatics

Complementary Courses (21 credits)
6 credits from the following:
BINF 621 (3) Bioinformatics: Molecular Biology
BMDE 652 (3) Bioinformatics: Proteomics
BTEC 555 (3) Structural Bioinformatics
COMP 618 (3) Bioinformatics: Functional Genomics
PHGY 603 (3) Systems Biology and Biophysics

15 credits of approved courses at the 500 or 600 level. Additional courses may be required at the discretion of the candidate's supervisory committee.

Thesis Component – Required (24 credits)
MATH 600 (6) Master's Thesis Research 1
MATH 601 (6) Master's Thesis Research 2
MATH 604 (6) Master's Thesis Research 3
MATH 605 (6) Master's Thesis Research 4

M.Sc. in Mathematics and Statistics (Thesis) – Computational Science and Engineering (CSE) (47 credits)

Required Course (1 credit)
MATH 669D1 (0.5) CSE Seminar
MATH 669D2 (0.5) CSE Seminar

Complementary Courses (minimum 22 credits)
Two courses from List A, two courses from List B, and the remaining credits to be chosen from graduate (500 or 600 level) courses in the Department of Mathematics and Statistics. Two complementary courses must be taken outside the Department of Mathematics and Statistics.

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 514 (3) Structural Mechanics
CIVE 572 (3) Computational Hydraulics
CIVE 603 (4) Structural Dynamics
CIVE 613 (4) Numerical Methods: Structural Engineering
COMP 505 (3) Advanced Computer Architecture
COMP 557 (3) Fundamentals of Computer Graphics
COMP 558 (3) Fundamentals of Computer Vision
COMP 567 (3) Discrete Optimization 2
COMP 621 (4) Optimizing Compilers
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 651 (4) Asymptotic Expansion and Perturbation Methods
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 545 (3) Advanced Stress Analysis
MECH 572 (3) Introduction to Robotics
MECH 573 (3) Mechanics of Robotic Systems
MECH 576 (3) Computer Graphics and Geometrical Modelling
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) Heat Transfer
MECH 654 (4) Compt. Fluid Flow and Heat Transfer

Thesis Component – Required (24 credits)
MATH 600 (6) Master's Thesis Research 1
MATH 601 (6) Master's Thesis Research 2
MATH 604 (6) Master's Thesis Research 3
MATH 605 (6) Master's Thesis Research 4

Ph.D. in Mathematics and Statistics

Complementary Courses
12 approved graduate courses, at the 500 level or above, of 3 or more credits each.

Comprehensives – Required
MATH 700 (0) Ph.D. Preliminary Examination Part A
MATH 701 (0) Ph.D. Preliminary Examination Part B

Thesis – Required
The student must submit a thesis judged to be an original contribution to knowledge.

Ph.D. in Mathematics and Statistics – Bioinformatics

Students will meet the Ph.D. degree requirements of the Department of Mathematics and Statistics and the following requirements for the option.

Required Course (3 credits)
COMP 616 (3) Bioinformatics Seminar

Complementary Courses
The twelve one-semester complementary courses for the Ph.D. degree must include at least two from the list below, unless a student has completed the M.Sc.-level option in Bioinformatics, in which case only one course from the list below must be chosen:

- BINF 621 (3) Bioinformatics: Molecular Biology
- BMDE 652 (3) Bioinformatics: Proteomics
- BTEC 655 (3) Structural Bioinformatics
- COMP 618 (3) Bioinformatics: Functional Genomics
- PHGY 603 (3) Systems Biology and Biophysics

Comprehensives – Required
MATH 700 (0) Ph.D. Preliminary Examination Part A
MATH 701 (0) Ph.D. Preliminary Examination Part B

Thesis – Required
The student must submit a thesis judged to be an original contribution to knowledge.

48.6 Courses

Students preparing to register should consult Class Schedule on the web at www.mcgill.ca/student-records/register/class-schedule for the most up-to-date list of courses available; courses may have been added, rescheduled or cancelled after this Calendar was published. Class Schedule lists courses by term and includes days, times, locations, and names of instructors.

Approximately 15 of the 600- and 700-level courses will be given.

Term(s) offered (Fall, Winter, Summer) may appear after the credit weight to indicate when a course would normally be taught. Please check Class Schedule to confirm this information.

Notes: All undergraduate courses administered by the Faculty of Science (courses at the 100 to 500 level) have limited enrolment. With the permission of the instructor, prerequisites and corequisites for courses may be waived in individual cases.

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

★ Denotes courses taught only in alternate years.


MATH 525 Sampling Theory and Applications. (4) (Prerequisite: MATH 324 or equivalent) (Restriction: Not open to students who have taken MATH 425) Simple random sampling, domains, ratio and regression estimators, superpopulation models, stratified sampling, optimal stratification, cluster sampling, sampling with unequal probabilities, multistage sampling, complex surveys, nonresponse.

MATH 533 Honours Regression and Analysis of Variance. (4) (Prerequisites: MATH 357, MATH 247 or MATH 251.) (Restriction: Not open to students who have taken MATH 423.) (Note: An additional project or projects assigned by the instructor that require a more detailed treatment of the major results and concepts covered in MATH 243.) This course consists of the lectures of MATH 423 but will be assessed at the 500 level.

★ MATH 550 Combinatorics. (4) (Intended primarily for honours and graduate students in mathematics.) (Restriction: Permission of instructor.) Enumerative combinatorics: inclusion-exclusion, generating functions, partitions, lattices and Moebius inversion. Extremal combinatorics: Ramsey theory, Turan's theorem, Dilworth's theorem and extremal set theory. Graph theory: planarity and colouring. Applications of combinatorics.

MATH 552 Combinatorial Optimization. (4) (Prerequisite: MATH 350 or COMP 362 (or equivalent).) (Restriction: Not open to students who have taken or are taking COMP 552.) Algorithmic and structural approaches in combinatorial optimization with a focus upon theory and applications. Topics include: polyhedral methods, network optimization, the ellipsoid method, graph algorithms, matroid theory and submodular functions.

★ MATH 555 Fluid Dynamics. (4) (Fall) (Prerequisite: Undergraduate: MATH 315 and MATH 319 or equivalent) Kinematics. Dynamics of general fluids. Inviscid fluids, Navier-Stokes equations. Exact solutions of Navier-Stokes equations. Low and high Reynolds number flow.

MATH 556 Mathematical Statistics 1. (4) (Fall) (Prerequisite: MATH 357 or equivalent) Probability and distribution theory (univariate and multivariate). Exponential families. Laws of large numbers and central limit theorem.

MATH 557 Mathematical Statistics 2. (4) (Winter) (Prerequisite: MATH 556) Sampling theory (including large-sample theory). Likelihood functions and information matrices. Hypothesis testing, estimation theory. Regression and correlation theory.

MATH 560 Optimization. (4) (Prerequisite: Undergraduate background in analysis and linear algebra, with instructor's approval) Classical optimization in n variables. Convex sets and functions, optimality conditions for single-objective and multi-objective nonlinear optimization problems with and without constraints. Duality theories and their economic interpretations. Optimization with

MATH 564 ADVANCED REAL ANALYSIS 1. (4) (Fall) (Prerequisites: MATH 354, MATH 355 or equivalents) Review of theory of measure and integration; product measures, Fubini's theorem; Lp spaces; basic principles of Banach spaces; Riesz representation theorem for C(X); Hilbert spaces; part of the material of MATH 565 may be covered as well.

MATH 565 ADVANCED REAL ANALYSIS 2. (4) (Winter) (Prerequisite: MATH 564) Continuation of topics from MATH 564. Signed measures, Hahn and Jordan decompositions. Radon-Nikodym theorems, complex measures, differentiation in Rn, Fourier series and integrals, additional topics.

MATH 566 ADVANCED COMPLEX ANALYSIS. (4) (Winter) (Prerequisites: MATH 366 (formerly MATH 466), MATH 564.) Simple connectivity, use of logarithms; argument, conservation of domain and maximum principles; analytic continuation, monodromy theorem; conformal mapping; normal families, Riemann mapping theorem; harmonic functions, Dirichlet problem; introduction to functions of several complex variables.

MATH 570 HIGHER ALGEBRA 1. (4) (Fall) (Prerequisite: MATH 371 or equivalent) Review of group theory: free theorems and free products of groups. Sylow theorems. The category of R-modules; chain conditions, tensor products, flat, projective and injective modules. Basic commutative algebra; prime ideals and localization, Hilbert Nullstellensatz, integral extensions. Dedekind domains. Part of the material of MATH 571 may be covered as well.

MATH 571 HIGHER ALGEBRA 2. (4) (Winter) (Prerequisites: MATH 570 or consent of instructor) Completion of the topics of MATH 570. Rudiments of algebraic number theory. A deeper study of field extensions; Galois theory, separable and regular extensions, Semi-simple rings and modules. Representations of finite groups.

★ MATH 574 DYNAMICAL SYSTEMS. (4) (Winter) (Prerequisites: MATH 325 and MATH 354 or permission of the instructor.) Dynamical systems, phase space, limit sets. Review of linear systems. Stability. Liapunov functions. Stable manifold and Hartman-Grobman theorems. Local bifurcations, Hopf bifurcations, global bifurcations, Poincare Sections. Quadratic maps: chaos, symbolic dynamics, topological conjugacy, Sarkovskii's theorem, periodic doubling route to chaos. Smale Horseshoe.

MATH 576 GEOMETRY AND TOPOLOGY 1. (4) (Fall) (Prerequisite: MATH 354) Basic point-set topology, including connectedness, compactness, product spaces, separation axioms, metric spaces. The fundamental group and covering spaces. Simplicial complexes. Singular and simplicial homology. Part of the material of MATH 577 may be covered as well.


MATH 578 NUMERICAL ANALYSIS 1. (4) (Fall) (Prerequisites: MATH 247 or MATH 251; and MATH 387; or permission of the instructor.) Development, analysis and effective use of numerical methods to solve problems arising in applications. Topics include direct and iterative methods for the solution of linear equations (including preconditioning), eigenvalue problems, interpolation, approximation, quadrature, solution of nonlinear systems.

MATH 579 NUMERICAL DIFFERENTIAL EQUATIONS. (4) (Winter) (Prerequisites: MATH 575 and MATH 387 or permission of the instructor.) Numerical solution of initial and boundary value problems in science and engineering: ordinary differential equations; partial differential equations of elliptic, parabolic and hyperbolic type. Topics include Runge Kutta and linear multistep methods, adaptivity, finite elements, finite differences, finite volumes, spectral methods.

MATH 580 PARTIAL DIFFERENTIAL EQUATIONS 1. (4) (Fall) (Prerequisites: MATH 375 or equivalent) Classification and well-posedness of linear and nonlinear partial differential equations; energy methods; Dirichlet principle. Brief introduction to distributions; weak derivatives. Fundamental solutions and Green's functions for Poisson equation, regularity, harmonic functions, maximum principle. Representation formulae for solutions of heat and wave equations, Duhamel's principle. Method of Characteristics, scalar conservation laws, shocks.


MATH 589 ADVANCED PROBABILITY THEORY 2. (4) (Winter) (Prerequisites: MATH 587 or equivalent) Characteristic functions: elementary properties, inversion formula, uniqueness, convolution and continuity theorems. Weak convergence. Central limit theorem. Additional topic(s) chosen (at discretion of instructor) from: Martingale Theory; Brownian motion, stochastic calculus.

★ MATH 590 ADVANCED SET THEORY. (4) (Prerequisites: MATH 318, either MATH 355 or MATH 371, or permission of the instructor.) (Restriction: Not open to students who have taken or are taking MATH 488.) Students will attend the lectures and fulfill all the requirements of MATH 488. In addition, they will study an advanced topic agreed on with the instructor. Topics may be chosen from combinatorial set theory, Goedel's constructible sets, forcing, large cardinals.

★ MATH 591 MATHEMATICAL LOGIC 1. (4) (Winter) (Prerequisites: MATH 488 or equivalent or consent of instructor) Propositional logic and first order logic, completeness, compactness and Lowenheim-Skolem theorems. Introduction to axiomatic set theory. Some of the following topics: introduction to model theory, Herbrand's and Gentzen's theories, Lindström's characterization of first order logic.

★ MATH 592 MATHEMATICAL LOGIC 2. (4) (Winter) (Prerequisites: MATH 488 or equivalent or consent of instructor) Introduction to recursion theory; recursively enumerable sets, relative recursiveness. Incompleteness, undecidability and undefinability theorems of Gödel, Church, Rosser and Tarski. Some of the following topics: Turing degrees, Friedberg-Muchnik theorem, decidable and undecidable theories.

MATH 600 MASTER'S THESIS RESEARCH 1. (6) (Restriction: Not open to students who have taken or are taking MATH 640) Thesis research under supervision.

MATH 601 MASTER'S THESIS RESEARCH 2. (6) Thesis research under supervision.

MATH 604 MASTER'S THESIS RESEARCH 3. (6) Thesis research under supervision.

MATH 605 MASTER'S THESIS RESEARCH 4. (6) Thesis research under supervision.

MATH 606 ALGEBRAIC TOPOLOGY. (4) (Prerequisite: MATH 577) Homology and Cohomology theories. Duality theorems. Higher homotopy groups.

MATH 626 ADVANCED GROUP THEORY 1. (4) The structure of groups. Special classes of groups. Representation theory. Additional topics to suit the class.

MATH 627 ADVANCED GROUP THEORY 2. (4) A continuation of the topics listed in the description of MATH 626.
MATH 635 FUNCTIONAL ANALYSIS 1. (4) (Prerequisite: MATH 564, MATH 565, and MATH 566) Banach spaces. Hilbert spaces and linear operators on these. Spectral theory. Banach algebras. A brief introduction to locally convex spaces.

MATH 637 PARTIAL DIFFERENTIAL EQUATIONS 3. (4) (Prerequisite: MATH 581) Microlocal analysis and its applications to linear partial differential equations.


MATH 640 PROJECT 1. (8) (Restriction: Not open to students who have taken or are taking MATH 600) Project research under supervision.

MATH 641 PROJECT 2. (8) Project research under supervision.


MATH 666 SEMINAR MATHEMATICS AND STATISTICS 1. (2) (Restriction: Departmental approval required.) Study on an advanced topic in mathematics or statistics.

MATH 667 SEMINAR MATHEMATICS AND STATISTICS 2. (2) (Restriction: Departmental approval required.) Study on an advanced topic in mathematics or statistics.

MATH 669D1 (0.5), MATH 669D2 (0.5) CSE SEMINAR. (Restriction: This seminar course is open only to students who were admitted to the CSE Program Option.) (Students must also register for MATH 669N1 and MATH 669N2) Techniques and applications in computational science and engineering.

MATH 669N1 CSE SEMINAR. (0.5) (Restriction: This seminar course is open only to students who were admitted to the CSE Program Option.) (Students must also register for MATH 669N2) Techniques and applications in computational science and engineering.

MATH 669N2 CSE SEMINAR. (0.5) (Prerequisite: MATH 669N1) No credit will be given for this course unless both MATH 669D1 and MATH 669D2 are successfully completed in the twelve month period) Techniques and applications in computational science and engineering.

MATH 671 APPLIED STOCHASTIC PROCESSES. (4) Discrete parameter Markov chains, including branching processes and random walks. Limit theorems and ergodic properties of Markov chains. Continuous parameter Markov chains, including birth and death process. Topics selected from the following areas: renewal processes, Brownian motion, statistical inference for stochastic processes.

MATH 674 EXPERIMENTAL DESIGN. (4) Review of one-way and two-way analyses of variance; randomized block, Latin square and incomplete block designs; factorial designs, confounding, fractional replications; random and mixed models; split-plot designs; nested and hierarchical designs; response surface analysis. Weighted least squares. Analysis of variance with equal and unequal numbers in cells. Latin squares, complete factorial designs. Prediction and confidence bands, multiple comparisons. Random effects models.

MATH 678 APPLIED STATISTICAL METHODS 1. (4) Statistical data analysis, with special reference to applications of the main statistical methods to problems in medicine, biology, chemistry, etc. Extensive use of computer methods, especially subroutine packages for statistical data description, display and analysis.

MATH 680 COMPUTATION INTENSIVE STATISTICS. (4) (Prerequisites: MATH 556, MATH 557) Introduction to a statistical computing language, such as S-PLUS; random number generation and simulations; EM algorithm; bootstrap, cross-validation and other resampling schemes; Gibbs sampling. Other topics: numerical methods; importance sampling; permutation tests.


MATH 685D1 (2), MATH 685D2 (2) STATISTICAL CONSULTING. (Prerequisites: MATH 423, MATH 523, MATH 556, MATH 557. Equivalents may be substituted at instructor's discretion) (Restriction: Not open to students who have taken or are taking EPIB 686) Parametric survival models. Nonparametric analysis: Kaplan-Meier estimator and its properties. Covariates with emphasis on Cox's proportional hazards model. Marginal and partial likelihood. Logrank tests. Residual analysis. Homework assignments a mixture of theory and applications. In-class discussion of data tests.

MATH 687 READING COURSE IN MATHEMATICAL LOGIC. (4) A highly specialized study.

MATH 689 READING COURSE IN ALGEBRA. (4) A highly specialized study.

MATH 690 READING COURSE IN NUMBER THEORY. (4) A highly specialized study.

MATH 691 READING COURSE IN GEOMETRY/TOPOLOgy. (4) A highly specialized study.

MATH 693 READING COURSE IN ANALYSIS. (4) A highly specialized study.

MATH 695 READING COURSE IN APPLIED MATHEMATICS. (4) A highly specialized study.

MATH 697 READING COURSE IN STATISTICS. (4) A highly specialized study.

MATH 698 READING COURSE IN PROBABILITY. (4) A highly specialized study.

MATH 699 READING COURSE IN DISCRETE MATHEMATICS. (4) A highly specialized study.

MATH 700 PH.D. PRELIMINARY EXAMINATION PART A. (0)

MATH 701 PH.D. PRELIMINARY EXAMINATION PART B. (0)

MATH 704 TOPICS IN MATHEMATICAL LOGIC. (4)

MATH 706 TOPICS IN GEOMETRY AND TOPOLOGY 1. (4)

MATH 707 TOPICS IN GEOMETRY AND TOPOLOGY 2. (4)

MATH 720 TOPICS IN ALGEBRA 1. (4) This course covers an advanced topic in some branch of algebra.

MATH 721 TOPICS IN ALGEBRA 2. (4) This course covers an advanced topic in some branch of algebra.

MATH 722 TOPICS IN ALGEBRAIC GEOMETRY. (4) This course covers an advanced topic in some branch of algebra.

MATH 723 TOPICS IN GROUP THEORY. (4) This course covers an advanced topic in some branch of algebra.
MATH 726 TOPICS IN NUMBER THEORY. (4) This course covers an advanced topic in number theory.

MATH 727 TOPICS IN ARITHMETIC GEOMETRY. (4) This course covers an advanced topic in number theory.

MATH 740 TOPICS IN ANALYSIS 1. (4) This course covers an advanced topic in applied mathematics.

MATH 741 TOPICS IN ANALYSIS 2. (4) This course covers an advanced topic in some branch of analysis.

MATH 742 TOPICS IN MATHEMATICAL PHYSICS. (4) This course covers an advanced topic in some branch of analysis.

MATH 744 TOPICS IN SPECTRAL THEORY. (4) This course covers an advanced topic in some branch of analysis.

MATH 756 TOPICS IN OPTIMIZATION. (4) This course covers an advanced topic in Optimization.

MATH 758 TOPICS IN DISCRETE MATHEMATICS. (4) This course covers an advanced topic in Optimization.

MATH 761 TOPICS IN APPLIED MATHEMATICS 1. (4) This course covers an advanced topic in applied mathematics.

MATH 762 TOPICS IN APPLIED MATHEMATICS 2. (4) This course covers an advanced topic in applied mathematics.

MATH 763 TOPICS IN DIFFERENTIAL EQUATIONS. (4) This course covers an advanced topic in applied mathematics.

MATH 764 TOPICS IN PARTIAL DIFFERENTIAL EQUATIONS. (4) This course covers an advanced topic in applied mathematics.

MATH 765 TOPICS IN NUMERICAL ANALYSIS. (4) This course covers an advanced topic in applied mathematics.

MATH 782 TOPICS IN STATISTICS 1. (4) This course covers an advanced topic in applied mathematics.

MATH 783 TOPICS IN STATISTICS 2. (4) This course covers an advanced topic in applied mathematics.

MATH 784 TOPICS IN PROBABILITY. (4) This course covers an advanced topic in probability.

49 Mechanical Engineering

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Chair — A.K. Misra
Graduate Program Director — D.L. Frost
Graduate Recruitment and Fellowship Director — L. Mongeau
Graduate Aerospace Director — P. Hubert
Graduate MMM Co-Director — V. Thomson

49.1 Staff

Emeritus Professors
A.M. Ahmed; B.Sc.(O.Oaka), Ph.D.(McG.), Ing. (Thomas Workman Emeritus Professor of Mechanical Engineering)
R. Krystalets; B.Eng., M.Eng., Ph.D.(McG.), Ing.
S.J. Price; B.Sc., Ph.D.(Brst.), P.Eng.

Post-Retirement
G. Bach; B.Sc., M.Sc.(Birm.), Ph.D.(McG.)

Professors
M. Amabili; M.Sc.(Ancona), Ph.D.(Bologna) (Canada Research Chair)
B.R. Baliga; B.Tech.(I.I.T. Kanpur), M.Sc.(Case), Ph.D.(Minn.), Ph.D.(Cal. Tech.) (Canada Research Chair)
E. Fried; A.B.(Calif., Berk.), B.S.(Calif. Poly.), M.S., Ph.D.(Cal. Tech.) (Canada Research Chair)
L. Mongeau; B.Sc., M.Sc. (École Poly., Montr.), Ph.D.(Penn St.), Ing. (Canada Research Chair)

Associate Professors
L. Corteletti; M.Sc., Ph.D.(Cal. Tech.)
A.J. Higgins; B.Sc.(Ill.), M.S., Ph.D.(Wasb.)
P. Hubert; B.Eng., M.A.Sc.(École Poly., Montr.), Ph.D.(Br. Col.), Ing. (Canada Research Chair)
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)
M. Nahon; B.Sc.(Qu.), M.Sc.(Tor.), Ph.D.(McG), Ing.
P. Radziszewski; B.Sc.(Br. Col.), M.Sc., Ph.D.(Laval), Ing.
I. Sharif; B.A.Sc., Ph.D.(Tor.)
V. Thomson; B.Sc.(Windsor), Ph.D.(McM.) (Werner Graupe Professor of Manufacturing Automation)

Assistant Professors
F. Barthelat; M.Sc.(Roch.), Ph.D.(Nwestern)
J. M. Berthorston; B.Sc.(Man.), M.Sc., Ph.D.(Cal. Tech.)
S. Nadarajah; B.Sc.(Kansas), M.S., Ph.D.(Stan.)
D. Pasini; M.Sc.(Pavia), Ph.D.(Brst.), Ing.
S. Vengallatore; B.Tech.(B.H.U), Ph.D.(MIT) (Canada Research Chair)

Associate Members
R.E. Kearney (Biomedical Engineering), B.H.K. Lee

Non-Tenure Track Faculty
H. Attia, S. Girgis, J.A. Nemes, C.A. Rabbath, R. Sumner, T. Yee, D. Zorbas

49.2 Programs Offered

M.Eng., M.Sc. and Ph.D. degrees in Mechanical Engineering.
Advanced courses and laboratory facilities are available for graduate study leading to the M.Eng. and Ph.D. degrees in Mechanical Engineering. Some of the specific areas of research are as follows:
Aerodynamics; fluids and thermal engineering: Experimental fluid mechanics and aerodynamics, aeroacoustics, theoretical fluid mechanics; turbulence, mixing in turbulent flows; fluid flow control; fluid-structure interactions; computational fluid dynamics, multidisciplinary optimization, computer flow visualization; heat transfer; combustion, shock wave physics, energetic materials, high-speed reacting flows, hypersonic propulsion, 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, computational mechanics.

Dynamics and control: Multibody systems, legged and wheeled vehicles, compliant mechanisms, kinematic geometry; tethered systems, lighter-than-air craft, underwater vehicles; spacecraft dynamics, space robotics; modeling 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, 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.

A master in Manufacturing Management is jointly offered by the Faculty of Engineering and the Desautels Faculty of Management.

49.3 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 engineering degree (or equivalent). 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 engineering degree (or equivalent).

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.

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. Satisfactory 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 580 for the TOEFL test (or 237 on the computer-based test or 92 on the internet-based test, with each component score not less than 20); or a minimum overall band of 7.0 on the IELTS test. In addition, applicants must obtain a minimum score of 4.0 on the 'Test of Written English'.

49.4 Application Procedures

Applications will be considered upon receipt of:
1. application form;
2. $100 application fee;
3. two official versions of ALL university transcripts, including transfer-credit transcripts;
4. two official Referee Reports;
5. proof of English Proficiency test results (TOEFL or IELTS);
6. a 1-page statement of interest;
7. an updated list of publications;
8. a list of extra-curricular activities;
9. a current CV

Please consult www.mcgill.ca/mecheng/grad/admissions/doc for further details on required application documents.

The application form for graduate program candidates is available at www.mcgill.ca/gradapplicants/apply. All additional information is to be submitted directly to the Graduate Admissions Coordinator in the Mechanical Engineering Department.

Dates for Guaranteed Consideration

For dates for guaranteed consideration, please consult the following website: www.mcgill.ca/gradapplicants/programs. Then select the appropriate program.

49.5 Program Requirements
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 514 (3) Structural Mechanics
- CIVE 572 (3) Computational Hydraulics
- CIVE 603 (4) Structural Dynamics
- CIVE 613 (4) Numerical Methods: Structural Engineering
- COMP 505 (3) Advanced Computer Architecture
- COMP 557 (3) Fundamentals of Computer Graphics
- COMP 558 (3) Fundamentals of Computer Vision
- COMP 567 (3) Discrete Optimization 2
- COMP 621 (4) Optimizing Compilers
- COMP 642 (4) Numerical Estimation Methods
- COMP 767 (3) 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 651 (4) Asymptotic Expansion and Perturbation Methods
- 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 545 (3) Advanced Stress Analysis
- MECH 572 (3) Introduction to Robotics
- MECH 573 (3) Mechanics of Robotic Systems
- MECH 576 (3) Computer Graphics and Geometrical Modelling
- 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 687 (3) Aerospace Case Studies (or equivalent at the graduate level)

Project Component - Required (13 credits)
- MECH 603 (9) M.Eng. Project 1
- MECH 604 (3) M.Eng. Project 2
- MECH 609 (1) Seminar

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

M.Eng. in Aerospace Engineering (Non-Thesis) (minimum 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;

Required Courses (9 credits)
- MECH 687 (3) Aerospace Case Studies (or equivalent at the graduate level)
- 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 Advisor. A maximum of 3 credits of FACC courses at the 500 level or higher may be credited toward the degree.

Master in Management (Manufacturing) (56 - 57 credits)
The Master in Manufacturing Management program (M.M.M.) is offered to students who wish to have a career as manufacturing managers. The curriculum is a balance between manufacturing and management subjects and provides exposure to industry through case studies, seminars, tours and a paid industry internship. The M.M.M. program is a 12-month academic program starting in September followed by a 4-month industrial internship. The program is a collaboration between the Faculty of Engineering and the Desautels Faculty of Management, which jointly grant the Master of Management degree.

Students should hold an undergraduate degree in engineering or science. Two or more years of industrial experience is preferred, but not mandatory. Students with other academic backgrounds and appropriate industrial experience will be considered, but may have to take one or two qualifying courses. The program is intended for full-time as well as part-time students. Enrolment is limited.

The M.M.M. program is a self-funded program. Tuition is $28,000,000.

General Business and Management – Required Courses (11 credits)
- MGCR 651 (4) Managing Resources
- MGCR 652 (4) Value Creation
- MGSC 608 (3) Data Decisions and Models
General Business and Management – Complementary Courses (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 640 (3) The Art of Leadership
ORGB 685 (3) Cross Cultural Management

Manufacturing and Supply Chain Operations – Required Courses (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

Manufacturing and Supply Chain – Complementary Courses (12-13 credits)
6 credits from the following:
MECH 526 (3) Manufacturing and the Environment
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 or 7 credits from:
Process Manufacturing Option
CHEE 641 (3) Chemical Reaction Engineering

Industry – Required Courses (12 credits)
MECH 627 (9) Manufacturing Industrial Stage
MECH 628 (2) Manufacturing Case Studies
MECH 629 (1) Manufacturing Industrial Seminar

Ph.D. Degree in 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.
Courses will be selected by a committee, which includes the supervisor, in consultation with the student. The course selection will depend on the existing academic qualifications of the student and those needed to conduct the proposed research.
Candidates are required to pass a preliminary oral examination within 12 to 16 months of their initial registration for the Ph.D. degree.
The residence requirement for Ph.D. candidates is outlined in the General Information section of the Graduate and Postdoctoral Studies Calendar.

Required Course (0 credits)
MECH 701 (0) Ph.D. Comprehensive Preliminary Oral Examination

49.6 Courses
Students preparing to register should consult Class Schedule on the web at www.mcgill.ca/student-records/register/class-schedule for the most up-to-date list of courses available; courses may have been added, rescheduled or cancelled after this Calendar was published. Class Schedule lists courses by term and includes days, times, locations, and names of instructors.

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

MECH 500 Selected Topics in Mechanical Engineering. (3) (3-0-6) A course to allow the introduction of new topics in Mechanical Engineering as needs arise, by regular and visiting staff.
MECH 501 Special Topics: Mechanical Engineering. (3) (3-0-6) A course to allow the introduction of new topics in Mechanical Engineering as needs arise, by regular and visiting staff.

MECH 513 CONTROL SYSTEMS. (3) (3-1-5) (Prerequisite: MECH 412 or MECH 419.) (Restriction: Not open to students who have taken MECH 413.) Stability: Lyapunov, Routh-Hurwitz and Nyquist criteria. Root-locus design of feedback control systems. Controller design based on polynomial methods and internal model principle. Frequency-response controller design. State feedback control. Controllability, observability, LQR, full- and reduced-order observer design. Robust control design. Optimization problems in control.

MECH 515 Unsteady Gasdynamics 2. (3) (3-1-5) (Prerequisites: MECH 341, MECH 430.) (Restriction: Not open to students who have taken MECH 615) Fundamentals of unsteady gasdynamics. Shock and detonation waves in gases and condensed material. Condensed explosives: hydrodynamic theory, equations of state, initiation. Shock interactions. Blast wave theory, similarity methods, blast scaling.


MECH 524 COMPUTER INTEGRATED MANUFACTURING. (3) (3-0-6) (Prerequisite: Permission of the instructor) A study of the present impact of computers and automation on manufacturing. Computer-aided systems. Information modelling. Information system structures. Study of several types of production systems. Integration issues: inter-and intra-enterprise. Laboratory experience with manufacturing software systems.

MECH 526 MANUFACTURING AND THE ENVIRONMENT. (3) (Summer) (3-0-6) (Prerequisite: Undergraduate; Permission of the instructor) (This course in the Faculty of Engineering is open only to McGill students.) Course topics include: clean manufacturing, product and process design for minimizing materials and energy use, the product life cycle, impact of technology on the environment, environmental impact assessment, regulatory process, and managing the "political" process.

MECH 528 PRODUCT DESIGN. (3) (3-0-6) (Prerequisite: Undergraduate); Permission of the instructor) A study of the design issues present in product life cycle demands. Computer-aided systems. Rapid prototyping. Design for manufacturability. Integration of mechanics, electronics and software in products. Effect on design of product cost, maintainability, recycling, marketability.

MECH 529 DISCRETE MANUFACTURING SYSTEMS. (3) (Summer) (3-0-6) (Prerequisite: Undergraduate) Permission of the instructor) (Due to the intensive nature of this course, the standard add/drop and withdrawal deadlines do not apply. Add/drop is the second lecture day and withdrawal is the fourth lecture day.) (This course in the Faculty of Engineering is open only to McGill students.) An overview of present day production machines and
systems with special emphasis on automation, computer control and integration techniques. Material handling, automatic inspection, process monitoring, maintenance. Socio-economic and environmental issues. Laboratory experience with factory simulation.


MECH 531 AERODYNAMICS. (3) (3-1-5) (Prerequisite (Undergraduate): MECH 419 or MECH 531 and MECH 533) (Prerequisite (Graduate): MECH 533) Wing divergence using strip-theory aerodynamics. Effect of aircraft flexibility on the control and stability. Flutter calculations for two-dimensional wings with discussion of three-dimensional effects. Some examples of aerodynamic instability, and the relevant analysis of non-aeronautical problems.

MECH 532 AIRCRAFT PERFORMANCE, STABILITY AND CONTROL. (3) (3-1-5) (Prerequisite (Undergraduate): MECH 412 or MECH 419). (Prerequisite (Graduate): MECH 533) Aircraft performance criteria such as range, endurance, rate of climb, maximum ceiling for steady and accelerated flight. Landing and take-off distances. Static and dynamic stability in the longitudinal (stick-fixed and stick-free) and coupled lateral and directional modes. Control response for all three modes.

MECH 533 SUBSONIC AERODYNAMICS. (3) (3-1-5) (Prerequisite (Undergraduate): MECH 331) Kinematics: equations of motion; vorticity and circulation, conformal mapping and flow round simple bodies. Two-dimensional flow round aerofoils. Three-dimensional flows; high and low aspect-ratio wings: airscrews. Wind tunnel interference. Similarity rules for subsonic irrotational flows.

MECH 534 AIR POLLUTION ENGINEERING. (3) (3-0-6) (Prerequisite (Undergraduate): MECH 331, MECH 341.) Pollutants from power plants. Effects of engines on the environment. Mechanisms of pollutant formation in combustion. Photochemical pollutants and smog, atmospheric dispersion. Pollutant generation from internal combustion engines and stationary power plants. Methods of pollution control (exhaust gas treatment, absorption, filtration, scrubbers, etc.).


MECH 536 UNSTEADY AERODYNAMICS. (3) (3-0-6) (Prerequisite (Undergraduate): MECH 533) Fundamental equations of unsteady compressible flows in fixed or moving reference frames. Unsteady flows past bodies in translation and having oscillatory motions. Oscillations of cylindrical pipes or shells subjected to internal flows. Vortex theory of oscillating aerofoils in incompressible flows. Theodorsen's method. Unsteady compressible flow past oscillating aerofoils.


MECH 541 KINEMATIC SYNTHESIS. (3) (3-0-6) (Prerequisite: MECH 309 or MATH 317 or permission of the instructor.) The role of kinematic synthesis within the design process. Degree of freedom. Kinematic pairs and bonds. Groups and subgroups of displacements. Applications to the qualitative synthesis of parallel-kinematic machines with three and four degrees of freedom. Function, motion and path generation problems in planar, spherical and spatial four-bar linkages. Extensions to six-bar linkages. Cam mechanisms.

MECH 542 SPACECRAFT DYNAMICS. (3) (3-0-6) (Prerequisite (Undergraduate): MECH 220. Corequisite: MECH 412 or MECH 419) Review of central force motion; Hohmann and other coplanar transfers, rotation of the orbital plane, patched conic motion. Orbital perturbations due to the earth's oblateness, solar-lunar attraction, solar radiation pressure and atmospheric drag. Attitude dynamics of a rigid spacecraft; attitude stabilization and control; attitude maneuvers; large space structures.


MECH 544 PROCESSING OF COMPOSITE MATERIALS. (3) (3-0-6) (Prerequisite: MECH 530 or permission of instructor.) (Restriction: This course requires the use of a finite element software, so experience with finite elements is recommended.) Composite processing science basic principles. Reinforcement properties; permeability, compaction. Resin properties; curing, viscosity, shrinkage. Heat transfer and cure kinetics; cure cycle optimization. Resin flow; infusion, thickness variations, fiber volume fraction distribution. Residual stresses; tool-part interaction, warpage control, spring-back, tool design. Thermoplastic composites; crystallization control, melting and consolidation.


MECH 546 FINITE ELEMENT METHODS IN SOLID MECHANICS. (3) (3-0-6) (Prerequisites: MECH 315 or MECH 419, and MECH 321, or Instructor's permission.) (Restriction: Not open to students who have taken MECH 645.) Discrete systems; variational formulation and approximation for continuous systems; direct and variational methods of element formulation in 1-2- and 3 dimensions; formulation of isoparametric finite elements; plate and shell elements; finite element method for static analysis, vibration analysis and structural dynamics; introduction to nonlinear problems.

MECH 553 DESIGN AND MANUFACTURE OF MICRODEVICES. (3) (3-0-6) (Prerequisite: Instructors' Permission.) Introduction to microelectromechanical systems (MEMS). Micromachining techniques (thin-film deposition; lithography; etching; bonding). Microscale mechanical behaviour (deformation and fracture; residual stresses; adhesion; experimental techniques). Materials and process-selection. Process integration. Design of microdevice components to meet specified performance and reliability targets using realistic manufacturing processes.

MECH 554 MICROPROCESSORS FOR MECHANICAL SYSTEMS. (3) (2-3-4) (Prerequisite (Undergraduate): MECH 383 and COMP 208) Digital logic and circuits - asynchronous and synchronous design. Microcontroller architectures, organization and programming - assembly and high-level. Analog/digital/hybrid sensors and actuators. Sensing and conditioning subsystems. Interfacing issues. Real-time issues. Operator interfaces. Laboratory exercises on digital logic design, interfacing and control of peripherals with a final team project.

MECH 557 MECHATRONIC DESIGN. (3) (3-1-5) (Prerequisite (Undergraduate): ECSE 461, MECH 383 and MECH 412 or MECH 419) Team project course on the design, modelling, model validation, and control of complete mechatronic systems.
constructed with modern sensors, actuators, real-time operating systems, embedded controllers, and intelligent control. MECH 561 BIOMECHANICS OF MUSCULOSKELETAL SYSTEMS. (3) (3-0-6) (Prerequisite: Undergraduate; MECH 301 or MECH 351 or MECH 419) The musculoskeletal system; general characteristics and classification of tissues and joints. Biomechanics and clinical problems in orthopaedics. Modelling and force analysis of musculoskeletal systems. Passive and active kinematics. Load-deformation properties of passive connective tissue, passive and stimulated muscle response. Experimental approaches, case studies.

MECH 562 ADVANCED FLUID MECHANICS. (3) (3-0-6) (Prerequisite: MATH 271 or permission of instructor.) Conservation laws, control volume analysis, Navier Stokes equations, dimensional analysis and limiting forms of N-S equation, laminar viscous flows, boundary layer theory, inviscid potential flows, lift and drag, introduction to turbulence.

MECH 563 BIOFLUIDS AND CARDIOVASCULAR MECHANICS. (3) (3-0-6) (Prerequisites: CHEE 314 or MECH 331 or permission of instructor) (Restriction: Not open to students who have taken CHBE 563) Basic principles of circulation including vascular fluid and solid mechanics, modelling techniques, clinical and experimental methods and the design of cardiovascular devices.

MECH 565 FLUID FLOW AND HEAT TRANSFER EQUIPMENT. (3) (3-1-6) (Prerequisite: Undergraduate) MECH 240, MECH 309 or MATH 317, MECH 331, MECH 341, MECH 346 or permission of the instructor.) Pipes and piping systems, pumps, and valves. Fans and building air distribution systems. Basic thermal design methods for fans and heat exchangers. Thermal design of shell-and-tube and compact heat exchangers.

MECH 566 FLUID-STRUCTURE INTERACTIONS. (3) (3-0-6) (Prerequisite: MECH 315 or MECH 419 or equivalent.) Pipes and cylindrical shells containing flow: fundamentals and applications in ocean mining, Coriolis mass-flow meters, heat exchangers, nuclear reactors and aircraft engines; chaos. Cylinders in axial flow and in cross-flow; vortex-shedding and galloping. Cylinder arrays in cross-flow, fluidelastic instabilities. Ovaling of chimneys.

MECH 572 INTRODUCTION TO ROBOTICS. (3) (3-0-6) (Prerequisite: Undergraduate; MATH 266 or MATH 271) and MECH 220 or permission of the instructor) (Restriction: Not open to students who have taken MECH 573) Overview of the field of robotics. Kinematics, statics, singularity analysis and workspace of serial robots with decoupled architecture. Direct and inverse kinematics and dynamics. Algorithms for manipulator kinematics and dynamics.

MECH 573 MECHANICS OF ROBOTIC SYSTEMS. (3) (3-0-6) (Prerequisite: MECH 309 or MATH 317, and MECH 572 or permission of the instructor.) (Since the course is open to both undergraduate and graduate students, and B- is the minimum passing mark for graduate students, this minimum mark will be relaxed for undergraduates. The regulations applicable to undergraduates will apply accordingly.) Manipulator performance and design. Pick-and-place and continuous-path operations. Computation of rigid-body angular velocity and acceleration from point-data measurements. Inverse kinematics of serial manipulators with coupled architectures; kinetostatics of multifingered hands and walking machines. Kinematics and dynamics of parallel manipulators and wheeled mobile robots.

MECH 576 COMPUTER GRAPHICS AND GEOMETRICAL MODELLING. (3) (2-3-4) (Prerequisite: Undergraduate: MATH 266 or MATH 271) and (MECH 309 or MATH 317) and (MECH 289 or MECH 290 or MECH 291) or permission of the instructor.) Review of pertinent linear algebra and projective geometry. Explicit, implicit and parametric polynomial forms. Splines: curves and surfaces. Properties: curvature, twist, continuity. Ruled surfaces and other quad patches. Constructive solid models; Octree/Voxel, sweep wireframe, Boolean, boundary representation. Mechanical Engineering applications.

MECH 577 OPTIMUM DESIGN. (3) (2-3-4) (Prerequisite: MECH 309 or MATH 317 or permission of the instructor) The role of optimization within the design process: Design methodology and philosophy. Constrained optimization: The Kuhn-Tucker conditions. Techniques of linear and non-linear programming. The simplex and the complex methods. Sensitivity of the design to manufacturing errors. Robustness of the design to manufacturing and operation errors.

MECH 578 ADVANCED THERMODYNAMICS. (3) (3-0-6) Review of classical mechanics; Boltzmann statistics, thermodynamics of ideal gases; Fermi-Dirac and Bose-Einstein statistics, Gibbsian ensembles; elementary kinetic theory of transport processes. Boltzmann equation, Boltzmann H-theorem and entropy, KBG approximation, discussion on the solution of Boltzmann equation; Maxwell transport equations, derivation of Navier Stokes equations.

MECH 593 DESIGN THEORY AND METHODOLOGY. (3) (3-0-6) (Prerequisite: Permission of instructor.) The overall design process is scrutinized within a discipline-independent framework. The nature of design as a creative engineering activity. The polarity of design. The role of knowledge in design. Design representation. History of design and design schools. Design trends in the 21st century. Design engineering schools. Design models.

MECH 600 ADVANCED TOPICS IN MECHANICAL ENGINEERING 1. (4) (3-1-8) New developments related to mechanical engineering.

MECH 602 ADVANCED TOPICS IN MECHANICAL ENGINEERING 2. (3) New developments related to Mechanical Engineering will be presented either by staff or by visiting professors.

MECH 603 M.Eng. PROJECT 1. (9) Supervised project.

MECH 604 M.Eng. PROJECT 2. (3) Supervised project.


MECH 609 SEMINAR. (1) All candidates for a Master's degree (except those in the Aerospace Program) are required to participate and to deliver one paper dealing with their particular area of research or interest.

MECH 610 FUNDAMENTALS OF FLUID DYNAMICS. (4) (Prerequisite: MECH 605 or permission of instructor) Conservation laws control volume analysis, Navier Stokes Equations and some exact solutions, dimensional analysis and limiting forms of Navier Stokes Equations. Vorticity, Potential flow and lift, boundary layer theory, drag, turbulence.

MECH 616 VISCOUS FLOW AND BOUNDARY LAYER THEORY. (4) (3-0-3) (Prerequisite: MECH 610 or permission of instructor.) Navier-Stokes equations. Laminar boundary layer equations. Similarity, approximate and exact solutions, including wakes and jets. Boundary layer separation. Stability of laminar flow. Transition to turbulence. Lubrication theory. Low Reynolds numbers flows, Oseen approximation.


MECH 627 MANUFACTURING INDUSTRIAL STAGE. (9) (Restriction: students in the M.M.M. Program) An industrial work term is an integral component of the M.M.M. program which is to be completed under the supervision of an experienced engineer in the facilities of a sponsoring company.
MECH 692 M.ENG. THESIS RESEARCH PROPOSAL. (4) Initiation of research with particular emphasis on the definition of the thesis topic.

MECH 693 M.ENG. THESIS PROGRESS REPORT 1. (3) A first status report on the progress in the thesis research.


MECH 695 M.ENG. THESIS. (12) Submission of the M.Eng. thesis for examination.

MECH 701 PH.D. COMPREHENSIVE PRELIMINARY ORAL EXAMINATION. (0) Presentation of the Ph.D. thesis proposal by the student and oral examination of the student's background in related areas.

50 Medical Physics

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Director — J.P.F. Seuntjens; M.Sc., Ph.D. (Ghent), M.C.C.P.M., F.A.A.P.M.

50.1 Staff

Professors
S.M. Lehner; B.Sc. (Nott.), M.Sc., Ph.D. (Lond.)
G.B. Pike; B.Eng. (St. John's), M.Eng., Ph.D. (McG.)
E.B. Podgorsak; Dipl.Ing. (Ljubljana), M.Sc., Ph.D. (Wis.),
F.C.C.P.M., F.A.A.P.M., D.A.B.M.P.

Associate Professors
J.P.F. Seuntjens; M.Sc., Ph.D. (Ghent), M.C.C.P.M., F.A.A.P.M.

Assistant Professor
M.D.C. Evans; B.A. (Qu.), M.Sc. (McG.), F.C.C.P.M.

Lecturers
W. Abdel-Rahman, M. Brodeur, F. DeBlois, S. Devic, A. Gauvin,
G. Hegyi, C. Janicki, P. Léger; E. Meyer, W.A. Parker,
H.J. Patrocino, R. Ruo, G. Stroian

Associate Members
R.B. Richardson, W. Wierzbicki

50.2 Programs Offered

The Medical Physics Unit offers an M.Sc. in Medical Radiation Physics. Facilities are available for students to undertake a Ph.D. in Medical Physics through the Department of Physics.

The Unit is a teaching and research unit concerned with the application of physics and related sciences in medicine, especially (but not exclusively) in radiation medicine, i.e., radiation oncology, medical imaging and nuclear medicine.

The research interests of members of the Unit include various aspects of medical imaging, including 3D imaging, the development of new imaging modalities and applications of imaging in radiation therapy; radiation dosimetry, especially solid state, electret and NMR systems; nuclear cardiology; and applications of radiation biology to therapy.

The M.Sc. and Ph.D. programs in Medical Physics are accredited by the Commission on Accreditation of Medical Physics Education Programs, Inc., sponsored by the American Association of Physicists in Medicine (AAPM), the American College of Medical Physics (ACMP), the American College of Radiology (ACR), and the Canadian College of Physicists in Medicine (CCPM).

50.3 Admission Requirements

Candidates applying to the M.Sc. program must normally hold a B.Sc. degree (Honours or Major) in Physics or Engineering, with a minimum overall GPA of 3.0/4.0 (minimum of 70%).

50.4 Application Procedures

Dates for Guaranteed Consideration

For dates for guaranteed consideration, please consult the following website: www.mcgill.ca/gradapplicants/programs. Then select the appropriate program.

Students are admitted to the M.Sc. program only to start in the Fall term (in September) of a given academic year. Applications for consideration for the Fall term of 2010 must be completed by the dates for guaranteed consideration.

Applications being made to McGill University graduate programs for September 2010 can only be made online via McGill’s website. For information regarding the application procedure and to access the application form, please go to www.mcgill.ca/gradapplicants/apply or go directly to the Medical Physics Unit admissions website at www.medphys.mcgill.ca and click on Academic and then Admissions Information.

Only complete applications will be considered. Interested candidates should (a) ask their university(ies) to send two originals of each transcript, and (b) request that original confidential letters of recommendation be sent by professors familiar with their work.

Letters must be originals, must be dated within the last two years, and must be written on official university letterhead, otherwise they will not be accepted. The application fee of $100 may be remitted in either Canadian or U.S. funds. When preparing the online application form, the application fee is remitted via a valid credit card. Applicants must either complete the “Applicant Statement” portion of the online application, or alternatively may submit a one-page “Statement of Interest” part of their supporting documentation.

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 by a TOEFL, IBT or IELTS. The original test report must be sent by the testing center, i.e., a photocopy sent by the applicant is not acceptable. The test must have been taken within the two years prior to date of application review, i.e., not prior to April 2008: www.mcgill.ca/gradapplicants/apply/prepare/requirements/english. Applicants from some countries are exempt from providing evidence of English language proficiency: www.mcgill.ca/gradapplicants/apply/prepare/requirements/english/exemptions.

All supporting application materials should be sent directly to the Administrative Coordinator, Medical Physics Unit, and should reach the department by the dates for guaranteed consideration.

50.5 Program Requirements

M.Sc. in Medical Radiation Physics (Thesis) (60 credits)

This two-year program provides a comprehensive introduction to the academic, research and practical aspects of physics applied to radiation medicine. In addition to the thesis requirement (32 credits) there are 12 mandatory courses (28 credits). The practical and laboratory sections of the program are conducted in various McGill teaching hospitals. The program comprises:

1. didactic courses in radiation physics, radiation dosimetry, the physics of nuclear medicine and diagnostic radiology, medical imaging, medical electronics and computing, radiation biology and radiation hazards and protection;
2. seminars in radiation oncology, diagnostic radiology and miscellaneous aspects of medical physics, e.g., lasers;
3. laboratory courses in radiation dosimetry and medical imaging;
4. an individual research thesis.

**Required Courses** (28 credits)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>MDPH 601</td>
<td>Radiation Physics</td>
</tr>
<tr>
<td>MDPH 602</td>
<td>Applied Dosimetry</td>
</tr>
<tr>
<td>MDPH 603</td>
<td>Laboratory/Practicum 1</td>
</tr>
<tr>
<td>MDPH 607</td>
<td>Introduction to Medical Imaging</td>
</tr>
<tr>
<td>MDPH 608</td>
<td>Laboratory - Diagnostic Radiology and Nuclear Medicine</td>
</tr>
<tr>
<td>MDPH 609</td>
<td>Radiation Biology</td>
</tr>
<tr>
<td>MDPH 611</td>
<td>Medical Electronics</td>
</tr>
<tr>
<td>MDPH 612</td>
<td>Computers in Medical Imaging</td>
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<tr>
<td>MDPH 613</td>
<td>Health Physics</td>
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<tr>
<td>MDPH 614</td>
<td>Physics of Diagnostic Radiology</td>
</tr>
<tr>
<td>MDPH 615</td>
<td>Physics of Nuclear Medicine</td>
</tr>
<tr>
<td>MDPH 616</td>
<td>Selected Topics in Medical Physics</td>
</tr>
</tbody>
</table>

**Thesis - Required** (32 credits)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>MDPH 625</td>
<td>M.Sc. Thesis Research</td>
</tr>
</tbody>
</table>

### 50.6 Courses

Students preparing to register should consult Class Schedule on the web at [www.mcgill.ca/student-records/register/class-schedule](http://www.mcgill.ca/student-records/register/class-schedule) for the most up-to-date list of courses available; courses may have been added, rescheduled or cancelled after this Calendar was published. Class Schedule lists courses by term and includes days, times, locations, and names of instructors.

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

**MDPH 601 RADIATION PHYSICS.** (3) The production and properties of directly and indirectly ionizing radiations and their interactions with matter; basic theoretical and experimental aspects of radiation dosimetry.

**MDPH 602 APPLIED DOSIMETRY.** (3) (Prerequisite: MDPH 601) Theoretical and practical dosimetry of radiation sources, both external and internal with respect to the human body. Equipment used for external beam radiotherapy and brachytherapy.

**MDPH 603 LABORATORY PRACTICUM 1.** (2) (Prerequisite: MDPH 601.) (Corequisite: MDPH 602) This laboratory course gives some experience in practical-clinical aspects as applied to radiation therapy and to the techniques for the measurement of different physical parameters which characterize radiation beams. The student is exposed to the operation of various therapy units, dose measuring devices, 3D treatment planning, virtual simulator units, brachytherapy, quality assurance, calibration and thermoluminescent dosimetry.

**MDPH 607 INTRODUCTION TO MEDICAL IMAGING.** (3) (Prerequisite: MDPH 615) A review of the principles of medical imaging as applied to conventional diagnostic radiography, digital subtraction radiography, computed tomography and magnetic resonance imaging. The course emphasizes a linear system approach to the formation, processing and display of medical images.

**MDPH 608 LABORATORY - DIAGNOSTIC RADIOLOGY AND NUCLEAR MEDICINE.** (2) (Prerequisites: MDPH 614, MDPH 615.) This laboratory course takes place in hospital departments of medical diagnostic imaging and is designed to give the student a working knowledge of the performance parameters of the diagnostic imaging equipment. Laboratory classes will offer the student the practical experience of image quality control, on selected imaging equipment currently used in diagnostic medicine together with practical applications of the concepts studied in MDPH 614 and MDPH 615.

**MDPH 609 RADIATION BIOLOGY.** (2) Deals with the effects and mode of action of ionizing radiation on biological material from molecular interactions, through sub-cellular and cellular levels of organization, to the response of tissues, organs and the whole body. Includes the application of radiation biology to oncology and the biological aspects of environmental radiation exposure.

**MDPH 611 MEDICAL ELECTRONICS.** (2) An introductory course on electronics, with emphasis on digital electronics, data acquisition and microprocessors applied to instrumentation. A basic knowledge of electronics is assumed, but the detailed course contents may vary from year to year, depending on the background of the students.

**MDPH 612 COMPUTERS IN MEDICAL IMAGING.** (2) (Prerequisites: MDPH 611 or equivalent, MDPH 614, MDPH 615.) (Corequisite: MDPH 607.) The role of computers in the acquisition and storage of data in medical imaging systems, with special reference to computed tomography, gamma cameras, positron emission tomography. Special attention is paid to the interfacing requirements of each device and to image display systems. Demonstrations of some of these systems are included.

**MDPH 613 HEALTH PHYSICS.** (2) (Corequisite: MDPH 601) The hazards of ionizing radiations and the safe handling of radiation sources. Topics covered include basic principles; safety codes, laws and regulations; organization of radiation safety; and practical safety measures and procedures.

**MDPH 614 PHYSICS OF DIAGNOSTIC RADIOLOGY.** (3) A rigorous treatment of the physical principles and the instrumentation of radiology, computed tomography and ultrasound medical imaging systems. Special attention is paid to the analysis of the relations between imaging system design, image quality, and safety. Measurement techniques for the evaluation of medical imaging systems are reviewed.

**MDPH 615 PHYSICS OF NUCLEAR MEDICINE.** (3) (Corequisite: MDPH 601) The physics of radioactivity and the applications of radioisotopes and radiopharmaceuticals in medical diagnosis. Topics covered include fundamental nuclear physics, radioactivity, radiation spectrometry, the scintillation camera, image analysis and data processing in nuclear medicine, single photon emission tomography, and positron emission tomography.

**MDPH 616 SELECTED TOPICS IN MEDICAL PHYSICS.** (1) This course deals with anatomy and physiology, etiology and treatment of cancer and introductory medical statistics, three topics not covered by other courses in the program. Also clinical aspects of radiation oncology physics.

**MDPH 616D1 (0.5), MDPH 616D2 (0.5) SELECTED TOPICS IN MEDICAL PHYSICS.** (Students must register for both MDPH 616D1 and MDPH 616D2) (No credit will be given for this course unless both MDPH 616D1 and MDPH 616D2 are successfully completed in consecutive terms) (MDPH 616D1 and MDPH 616D2 together are equivalent to MDPH 616) This course deals with anatomy and physiology, etiology and treatment of cancer and introductory medical statistics, three topics not covered by other courses in the program. Also clinical aspects of radiation oncology physics.

**MDPH 625 M.Sc. Thesis Research.** (32)

**MDPH 625D1 (16), MDPH 625D2 (16) M.Sc. Thesis Research.** (Students must register for both MDPH 625D1 and MDPH 625D2) (No credit will be given for this course unless both MDPH 625D1 and MDPH 625D2 are successfully completed in consecutive terms) (MDPH 625D1 and MDPH 625D2 together are equivalent to MDPH 625)

**MDPH 625N1 M.Sc. Thesis Research.** (16) (Students must also register for MDPH 625N2) (No credit will be given for this course unless both MDPH 625N1 and MDPH 625N2 are successfully completed in a twelve month period) (MDPH 625N1 and MDPH 625N2 together are equivalent to MDPH 625)

**MDPH 625N2 M.Sc. Thesis Research.** (16) (Prerequisite: MDPH 625N1) (No credit will be given for this course unless both MDPH 625N1 and MDPH 625N2 are successfully completed in a twelve month period) (MDPH 625N1 and MDPH 625N2 together are equivalent to MDPH 625) See MDPH 625N1 for course description.
51.1 Staff

Emeritus Professors
T.M.S. Chang; B.Sc., M.D., C.M., Ph.D.(McG.), F.R.C.P.(C)
B.E.P. Murphy; B.A., M.D.(Tor.), M.Sc., Ph.D.(McG.), F.A.C.P.(C)

Professors
M. Alouai-Jamali; D.V.M.(Rabat, Morocco), Ph.D.(René-Decartes, Paris)
A. Bateman; B.Sc., Ph.D.(Lond.)
G. Batist; B.Sc.(Col.), M.D., C.M.(McG.), F.R.C.P.(C)
N. Beauchemin; B.A., B.Sc., M.Sc., Ph.D.(Montr.), H. Bennett; B.A.(York (UK)), Ph.D.(Brun.)
R. Blostein; M.Sc., Ph.D.(McG.)
A.E. Clarke; M.D.(Nfld.), M.S.(Stan.), F.R.C.P.(C)
M. Cosio; B.Sc.(Oviedo), M.D.(Madrid)
A. Cybulsky; M.D.(Tor.), F.R.C.P.(C)
D. Eidelberg; M.D., C.M.(McG.), F.R.C.P.(C)
A. Fuks; B.Sc., M.D., C.M.(McG.)
J. Genest, Jr.; M.D., C.M.(McG.), F.R.C.P.(C)
A. Gioid; D.V.M.(Baghdad), M.D., Ph.D.(Lond.)
V. Giguere; B.Sc., Ph.D.(Daval)
M. Goldberg; B.Sc., M.Sc., Ph.D.(McG)
D. Goltzman; B.Sc., M.D., C.M.(McG), F.R.C.P.(C)
S.A. Grover; B.A.(Roch.), M.D., C.M.(McG), M.P.A.(Harv.), F.R.C.P.(C)
O.A. Hamid; M.D.(Mosul, Iraq.), Ph.D.(Lond.)
G. Hendy; B.Sc.(Sheff.), Ph.D.(Lond.)
J. Hiscott; B.Sc., M.Sc.(W. Ont.), Ph.D.(NYU)
L.J. Hoffer; B.Sc., M.D., C.M.(McG), Ph.D.(MIT)
S. Hussein; M.D.(Baghdad), Ph.D.(McG)
A.C. Karaplis; B.Sc., M.D., Ph.D.(McG) (William Dawson Scholar)
L. Kleiman; B.Sc.(Ill.), Ph.D.(Johns H.)
R. Kremer; M.D., Ph.D.(Paris)
S. Lehnert; B.Sc.(Nottingham), M.Sc., Ph.D.(Lond.)
M. Levy; B.Sc., M.D., C.M.(McG), F.R.C.P.(C)
M.S. Ludwig; M.D.(Manit.), F.R.C.P.(C)
S. Magder; M.D.(Tor.), F.R.C.P.(C)
D. Malo; D.V.M., M.Sc.(Montr.), Ph.D.(McG)
Q.A. Mamer; B.Sc., Ph.D.(Windsor)
E. Marliess; M.D.(Alta.), F.R.C.P.(C)
J. Martin; B.Sc., M.B., B.Ch., M.D.(Cork), F.R.C.P.(C)
J. Milic-Emili; M.D.(Milan), F.R.C.S.
W.H. Miller; A.B.(Princ.), Ph.D.(Rock), M.D.(C'nell)
W.J. Muller; B.Sc., Ph.D.(McG)
A. Nepveu; B.Sc., M.Sc.(Montr.), Ph.D.(Sher.)
L. Panacci; B.Sc., M.D.(T'own)
V. Papadopoulos; D.Pharm.(Athens), Ph.D.(Paris)
M. Park; B.Sc., Ph.D.(Glas.)
A.C. Peterson; B.Sc.(Vic. (BC)), Ph.D.(Br. Col.)
B.J. Petrof; M.D.(Laval)
M.N. Pollak; M.D., C.M.(McG), F.R.C.P.(C)
P. Ponka; M.D., Ph.D.(Prague)
B. Posner; M.D.(Manit.), F.R.C.P.(C)
W.S. Powell; B.A.(Sask), Ph.D.(Dal)
S. Rabbani; M.B.B.S.(King Edward Med. Coll., Lahore)
D. Radzioch; M.Sc., Ph.D.(Jagiellonian, Cracow)
M. Rasminsly; B.A.(Tor.), M.D.(Harv.), Ph.D.(Lond.)
S. Richard; B.Sc., Ph.D.(McG)
E. Schifferin; M.D.(Argentina), Ph.D.(McG.)
E. Schurr; Diplom.; Ph.D.(Al. Ludwigs U., Freiburg)
E. Skamene; M.D., Ph.D.(Czech.), Ph.D.(Czech. Acad. of Sci.), F.R.C.P.(C), F.A.C.P.
A.D. Sniderman; M.D.(Tor.)
C. Srikant; M.Sc., Ph.D.(Madr.)
M.M. Stevenson; B.A.(Hood), M.Sc., Ph.D.(Catholic U. of Amer.)
D.M.P. Thomson; M.D.(W. Ont.), Ph.D.(Lond.), F.R.C.P.(C)
M. Trefiro; B.Sc., M.D., C.M.(McG)
C. Tsoukas; B.Sc.(McG), M.Sc.(Hawaii), M.D.(Athens), F.R.C.P.(C)
M. Wainberg; B.Sc.(McG), Ph.D.(Col.)
J. White; B.Sc., M.Sc.(Car.), Ph.D.(Harv.)
S. Wing; B.Sc., M.Sc.(McG)
M. Zannis-Hadjopoulos; B.Sc., M.Sc., Ph.D.(McG)
H. Zingg; M.D.(Basel), Ph.D.(McG).

Associate Professors
S. Ali; B.Sc.(C'dia), Ph.D.(McG)
R. Auziner; B.Sc.(C'dia), Ph.D.(McG)
D. Baran; M.D., C.M.(McG)
M. Behr; B.Sc.(Tor.), M.D.(Qu.), M.Sc.(McG)
N. Bernard; B.Sc.(McG), Ph.D.(Duke)
V. Blank; B.Sc., M.Sc.(Konstanz, Germany), Ph.D.(Inst. Pasteur)
M. Blostein; M.D., C.M.(McG)
S.R. Cohen; B.Sc., M.Sc., Ph.D.(McG)
L.F. Congote; B.Sc.(Zür.), Ph.D.(Marburg)
D. Courmonor; M.D.(Sher.), F.R.C.P.(C)
M. Culty; B.Sc., M.Sc.(Lyon), Ph.D.(Grenoble)
G. Di Battista; B.Sc.(C'dia), M.Sc., Ph.D.(Montr.)
F. Doualla-Bell; B.Sc., M.S., Ph.D.(Paris XI)
J.C. Engert; B.A.(Colby), Ph.D.(Boston)
E. Fixman; B.Sc.(Col.), Ph.D.(Johns H.)
R. Gagnon; B.Sc.(Montr.), M.D.(Laval), D.Phil.(Oxf.)
J. Galipeau; M.D.(Montr.)
A. Gatinon; M.Sc., Ph.D.(Paul Sabatier)
S.B. Gottfried; M.D.(Penn.)
J. Henderson; B.Sc., Ph.D.(McG)
J. Jean-Claude; B.Sc., M.Sc.(Moncton), Ph.D.(McG)
P. Lanevue; B.Sc.(McM.), M.D.(Ott.), F.R.C.P.(C)
S. Laporte; B.Sc., M.Sc., Ph.D.(Sher.)
L. Larose; B.Sc., Ph.D.(Montr.)
M. Laughrue; B.Sc.(Laval), M.Sc., M.Phil., Ph.D.(Yale)
A.-M. Lauzon; B.Sc., M.Sc., Ph.D.(McG)
J.-L. Lebrun; B.Sc., M.Sc., Ph.D.(Rennes, France)
L. Lecanu; M.Sc., Ph.D.(Paris)
J.-J. Lebrun; B.Sc., M.Sc., Ph.D.(Rennes, France)
A.-M. Lauzon; B.Sc., M.Sc., Ph.D.(Montr.)
L. Lecanu; M.Sc., Ph.D.(Paris)
J.-J. Lebrun; B.Sc., M.Sc., Ph.D.(Rennes, France)
A.-M. Lauzon; B.Sc., M.Sc., Ph.D.(Montr.)
L. Lecanu; M.Sc., Ph.D.(Paris)
J.-J. Lebrun; B.Sc., M.Sc., Ph.D.(Rennes, France)
A.-M. Lauzon; B.Sc., M.Sc., Ph.D.(Montr.)
L. Lecanu; M.Sc., Ph.D.(Paris)
Admission is based on an evaluation by the Admissions Committee, which looks for evidence of high academic achievement, and on acceptance by a research director. It is the policy of the Division that all students must be financially supported either by their supervisor or through studentships or fellowships.

In addition to the documentation currently required by Graduate and Postdoctoral Studies, a letter from the candidate’s research director outlining the M.Sc. or Ph.D. project is necessary.

M.Sc. (Bioethics Option)

Admission to the master’s program in Bioethics, from the base discipline Medicine, Nursing, Physical and Occupational Therapy, as well as any other professional health training degree. Students who do not fit these criteria may be considered for admission on an individual basis.

For those who apply to the M.Sc. (Bioethics Option), the requirements, as well as the application dates for guaranteed consideration are different. For further information regarding this program, please refer to the Bioethics entry or visit their website at www.mcgill.ca/biomedicalethicsunit/masters.

M.Sc. (Environment Option)

For those applicants wishing to apply to the master’s program (Environment Option), it should be noted that, although the requirements and application dates for guaranteed consideration remain the same, the student must remit additional documents which constitute their application to NOT ONLY the Division of Experimental Medicine but ALSO to the McGill School of Environment. All the relevant information can be found on the School of Environment website at www.mcgill.ca/mse/graduate.

The option of in-course addition of the Environment Option is also available to students in Experimental Medicine. For further information, students should refer to the departmental website or contact the student affairs office.

M.Sc. (Family Medicine Option)

The M.Sc. in Experimental Medicine (Thesis) – Family Medicine Option, is designed to provide research training to family physicians practicing in Quebec interested in conducting research in family medicine. Exceptionally, students who do not fit these criteria may be considered for admission on an individual basis.

For those who apply to the M.Sc. (Family Medicine Option), the requirements, as well as the application deadline are different. For further information regarding this program, please visit their website at: www.mcgill.ca/familymed/mastersprogram.

Graduate Diploma in Clinical Research

The diploma program is open to health care and research professionals, medical residents, pharmacists, nurses, and those with an undergraduate degree in the medical and allied sciences.

51.4 Application Procedures

Dates for Guaranteed Consideration

For dates for guaranteed consideration, please consult the following website: www.mcgill.ca/gradapplicants/programs. Then select the appropriate program.

Applications will be considered upon receipt of:

1. application form;
2. letter of intent;
3. curriculum vitae;
4. 2 copies of official university transcripts;
5. letters of reference (2);
6. $100 application fee;
7. test results (TOEFL and GRE);
8. additional documents (in the case of both the M.Sc. (Bioethics Option) and the M.Sc. (Environment Option)).

All information is to be submitted to the Departmental Office.
51.5 Program Requirements

MASTER’S

All students must have an annual Thesis Committee meeting by the end of their second term of registration and every 12 months subsequent to this.

M.Sc. in Experimental Medicine (Thesis) (45 credits)

Students have the option to fast-track to the Ph.D. after satisfactory completion of 12-18 months of the M.Sc., and this under the conditions set out by the Department. For further information, please contact the student affairs office.

Complementary Courses (9 - 21 credits)

9 to 21 credits of courses at the 500 level or higher chosen in consultation with supervisor (EXMD). A minimum of 9 course credits is required for students entering the program with a bachelor's or M.D. degree.

Thesis Component – Required (24 - 36 credits)

EXMD 690 (3) Master's Thesis Research 1
EXMD 691 (6) Master's Thesis Research 2
EXMD 692 (9) Master's Thesis Research 3
EXMD 693 (12) Master's Thesis Research 4
EXMD 694 (12) Master's Thesis Research 5

M.Sc. in Experimental Medicine (Thesis) – Bioethics Option/Concentration (45 credits)

Required Courses (6 credits)

BIOE 680 (3) Bioethical Theory
BIOE 681 (3) Bioethics Practicum

Complementary Courses (15 credits)

3 credits, one of:
BIOE 682 (3) Medical Basis of Bioethics
CMPL 642 (3) Law and Health Care
PHIL 543 (3) Seminar: Medical Ethics
RELG 571 (3) Religion and Medicine

12 credits, four 3-credit BIOE or EXMD graduate courses (500 or 600 level) chosen in consultation with the supervisor.

Thesis Component – Required (24 credits)

EXMD 690 (3) M.Sc. Thesis Literature Survey
EXMD 691 (3) M.Sc. Thesis Research Proposal
EXMD 693 (12) M.Sc. Thesis

For further information please contact Dr. Jennifer Fishman, Master's Specialization in Bioethics, Biomedical Ethics Unit, 3690 Peel Street, Montreal, QC, H3A 1W9. Telephone: 514-398-7403. Fax: 514-398-8349. Email: jennifer.fishman@mcgill.ca.

M.Sc. in Experimental Medicine (Thesis) – Environment Option/Concentration (45 credits)

Required Courses (6 credits)

ENVR 610 (3) Foundations of Environmental Policy
ENVR 650 (1) Environmental Seminar 1
ENVR 651 (1) Environmental Seminar 2
ENVR 652 (1) Environmental Seminar 3

Complementary Courses (15 credits)

3 credits, one of the following courses:*
ENVR 519 (3) Global Environmental Politics
ENVR 544 (3) Environmental Measurement and Modelling
ENVR 580 (3) Topics in Environment 3
ENVR 611 (3) The Economy of Nature
ENVR 620 (3) Environment and Health of Species
ENVR 622 (3) Sustainable Landscapes
ENVR 630 (3) Civilization and Environment 1
ENVR 680 (3) Topics in Environment 4

* or other course at the 500 level or higher recommended by the advisory committee and approved by the Environment Option Committee

12 credits of courses at the 500 level or higher chosen in consultation with the student's academic supervisor.

Thesis Component – Required (24 credits)

EXMD 690 (3) Master's Thesis Research 1
EXMD 692 (9) Master's Thesis Research 3
EXMD 693 (12) Master's Thesis Research 4

M.Sc. in Experimental Medicine (Thesis) – Family Medicine Option/Concentration (45 credits)

Required Courses (17 credits)

DENT 672 (3) Applied Mixed Methods in Health Research
EPIB 507 (3) Biostatistics for Health Professionals
EPIB 601 (4) Fundamentals of Epidemiology 1
FMED 501 (1) Mixed Studies Reviews
FMED 601 (3) Advanced Topics in Family Medicine Research
PSYT 625 (3) Qualitative Research in Health Care

Complementary Courses (4 credits)

0-1 credits from the following:
FMED 500* (1) Introduction to Research

3-4 credits of courses at the 500 level or higher may be chosen from outside the Department, in consultation with the student’s academic advisor or supervisor.

* For students with no prior research methods course.

Thesis Component – Required (24 credits)

EXMD 693 (12) Master's Thesis Research 4
EXMD 694 (12) Master's Thesis Research 5

Ph.D.

All students must have an annual Thesis Committee meeting by the end of their second term of registration and every 12 months subsequent to this. The only exception occurs in the second year of registration when students must register for and pass the Comprehensive Examination in lieu of the Thesis Committee meeting (see below).

Comprehensive Examination: All students registered as Ph.D. must take and pass the Comprehensive Oral Examination, listed as course EXMD 701 in the second year of their program (and this whether they first entered as either M.Sc. or Ph.D.). Students shall give a 30-minute presentation of their Ph.D. project and then answer questions from the Oral Committee. This examination will test: (i) if the student's work is progressing satisfactorily and is of sufficiently high calibre to warrant continuation in the program, and (ii) if the student has a broad knowledge, not only of his/her own field of research, but also of related areas in her/his discipline.

Course Work: A minimum of 12 course credits is required for students entering the program with a prior master's degree. Students having only a B.Sc. or M.D. degree and who have been either admitted directly or fast-tracked to the Ph.D. must complete a total of 18 credits. The following courses are highly recommended: EXMD 604D1/D2 Recent Advances in Cellular and Molecular Biology; EXMD 610 Biochemical Methods in Medical Research.

After consultation with their research supervisor and the Director of the Division, students may choose their courses from those offered by Experimental Medicine, Physiology, Biochemistry as well as other graduate and advanced undergraduate courses in the medical and allied sciences. Where necessary, students may enrol for credit in courses offered in the physical and mathematical sciences.

Required Courses (0 credits)

EXMD 701D1 (0) Comprehensive Oral Examination
EXMD 701D2 (0) Comprehensive Oral Examination
## Complementary Courses (12 - 18 credits)
A minimum of 12 course credits is required for students entering the program with a prior master's degree. Students having been fast-tracked to the Ph.D. must complete a total of 18 credits (9 credits in addition to the 9 which were originally requested upon entry into the M.Sc. program).

### Thesis – Required

**Ph.D. in Experimental Medicine – Environment Option/Concentration**

**Required Courses** (6 credits)
- ENVR 610 (3) Foundations of Environmental Policy
- ENVR 650 (1) Environmental Seminar 1
- ENVR 651 (1) Environmental Seminar 2
- ENVR 652 (1) Environmental Seminar 3
- EXMD 701D1 (0) Comprehensive Oral Examination
- EXMD 701D2 (0) Comprehensive Oral Examination

**Complementary Courses** (6 - 12 credits)

3 credits, one of the following courses:*
- ENVR 519 (3) Global Environmental Politics
- ENVR 544 (3) Environmental Measurement and Modelling
- ENVR 580 (3) Topics in Environment 3
- ENVR 611 (3) The Economy of Nature
- ENVR 620 (3) Environment and Health of Species
- ENVR 622 (3) Sustainable Landscapes
- ENVR 630 (3) Civilization and Environment 1
- ENVR 680 (3) Topics in Environment 4

* or other course at the 500 level or higher recommended by the advisory committee and approved by the Environment Option Committee

3 - 9 credits of courses at the 500 level or higher chosen in consultation with the student's academic supervisor.

### Thesis – Required

**Graduate Diploma in Clinical Research** (30 credits)

The core element of the diploma is the Practicum in Clinical Research. It is a six-step program with active 'clerkship' or 'intern-resident-type' participation in each component that is essential to the successful development and evaluation of a clinical trial.

Six 1-credit workshops will be provided by experts in the academic, industrial and government sectors, and cover wide-ranging issues pertinent to the conduct of clinical research.

**Required Courses** (6 credits)
- EXMD 617 (1) Workshop in Clinical Trials 1
- EXMD 618 (1) Workshop in Clinical Trials 2
- EXMD 619 (1) Workshop in Clinical Trials 3
- EXMD 620 (1) Clinical Trials and Research 1
- EXMD 625 (1) Clinical Trials and Research 2
- EXMD 626 (1) Clinical Trials and Research 3

**Complementary Courses** (6 credits)

6 credits, 2 courses chosen from: Experimental Medicine (EXMD), Pharmacology and Therapeutics (PHAR), Epidemiology and Biostatistics (EPIB). With approval, courses from other Allied Health Sciences departments may be considered.

**Practicum – Required** (18 credits)
- EXMD 627 (18) Practicum in Clinical Research

### 51.6 Courses

Students preparing to register should consult Class Schedule on the web at [www.mcgill.ca/student-records/register/class-schedule](http://www.mcgill.ca/student-records/register/class-schedule) for the most up-to-date list of courses available; courses may have been added, rescheduled or cancelled after this Calendar was published. Class Schedule lists courses by term and includes days, times, locations, and names of instructors.

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* Denotes courses taught only in alternate years.

**EXMD 502 ADVANCED ENDOCRINOLOGY 01.** (3) (Fall) (Prerequisite (Undergraduate): EXMD 301 or an equivalent course) This course is designed for U3 students who are in a major or honours program in anatomy, biology, biochemistry or physiology and for graduate students. A multidisciplinary approach will be used to teach biosynthesis and processing of hormones, their regulation, function and mechanism of action. The material will cover hypothalamic, pituitary, thyroid, atrial and adrenal hormones as well as prostaglandins and related substances.

**EXMD 503 ADVANCED ENDOCRINOLOGY 02.** (3) (Winter) Study of the parathyroids, gut and pancreatic hormones and growth factors. In addition, the role of hormones and growth factors in reproduction and fetal maturation will be discussed.

**EXMD 504 BIOLOGY OF CANCER.** (3) (Fall) (Prerequisite (Undergraduate): A good knowledge of biology at the cellular and molecular level. Open to U3 and graduate students only) An introduction to the biology of malignancy. A multidisciplinary approach dealing with the etiology of cancer, the biological properties of malignant cells, the host response to tumour cell growth and the principles of cancer therapy.

**EXMD 506 ADVANCED APPLIED CARDIOVASCULAR PHYSIOLOGY.** (3) (Fall) (Prerequisite (Undergraduate): PHGY 313 or by permission of instructors) Offered in conjunction with the Department of Physiology. Current topics, methods and techniques for studying the cardiovascular system. Basic and applied cardiac electrophysiology, mechanisms of pacemaker activity, arrhythmias, the effects of drugs on cardiac functions, fetal circulation, coronary circulation, mechanics of blood flow, cardiovascular diseases, renal and neural control of the circulation, and cardiac assist devices.

**EXMD 507 ADVANCED APPLIED RESPIRATORY PHYSIOLOGY.** (3) (Fall) (Prerequisite: PHGY 313) Offered in conjunction with the Department of Physiology. In depth coverage of developmental physiology, pulmonary vascular physiology, biology of airway smooth muscle, respiratory epithelium and molecular biology of respiratory muscles. Dyspnea, mechanical ventilation and respiratory failure will also be covered. This course emphasizes application of respiratory biology to basic and applied research and touches on pulmonary pathophysiology.

**EXMD 508 ADVANCED TOPICS IN RESPIRATION.** (3) (Winter) (Prerequisite: EXMD 507) Offered in conjunction with the Department of Physiology. In depth coverage of developmental physiology, pulmonary vascular physiology, biology of airway smooth muscle, respiratory epithelium and molecular biology of respiratory muscles. Dyspnea, mechanical ventilation and respiratory failure will also be covered. This course emphasizes application of respiratory biology to basic and applied research and touches on pulmonary pathophysiology.

**EXMD 509 GASTROINTESTINAL PHYSIOLOGY AND PATHOLOGY.** (3) (Fall and Winter) (Prerequisite: Graduate students, U3 undergraduate) Course deals with various aspects of gastrointestinal and hepatic function in health and altered physiological states. The principal focus is on the recent literature pertaining to cell and molecular mechanisms underlying the motility secretory process, absorption and secretion. The molecular biology of the hepatic viruses and various aspects of colonic neoplasia will also be considered.
EXMD 510 BIOANALYTICAL SEPARATION METHODS. (3) (Fall) The student will be taught the capabilities and limitations of bio- 
separation methods (gas and high-performance liquid chromatog- 
raphy, capillary electrophoresis, hyphenated techniques). Applica-
tion of these techniques to solve analytical problems relevant to 
biochemical research will be emphasized, with special attention 
being paid to the processing of biological samples.

EXMD 511 JOINT VENTURING WITH INDUSTRY. (3) (Winter) (Offered 
in conjunction with the Centre for Continuing Education) Using 
problem-based learning, the course examines the various busi-
ness interactions between researchers and their business part-
ners in support and development of research into commercial 
endeavours using models such as venture capital, business part-
nerships, or grants-in-aid.

EXMD 602 TECHNIQUES IN MOLECULAR GENETICS. (3) (Offered 
in conjunction with the Department of Experimental Medicine.) (Pre-
requisite (Graduate): Admission by permission of instructor.) Pre-
cise description of available methods in molecular genetics, and 
rationales for choosing particular techniques to answer questions 
posed in research proposals for targeting genes in the mammalian 
genome. Emphasis placed on analysis of regulation of gene 
expression and mapping, strategies for gene cloning. Course 
divided between lectures and student seminars.

EXMD 603 SEMINARS IN ENDOCRINOLOGY. (3) For graduate stu-
dents to develop skills in critical reading of current literature, inter-
pretation of research data, and seminar organization and 
presentation. Staff suggest topics. Each student presents two 
seminars on topics of their choice, supervised by professors 
responsible for those topics, and one mini-symposium style pre-
sentation on any topic.

EXMD 604D1 (3), EXMD 604D2 (3) RECENT ADVANCES IN CELLU-
LAR AND MOLECULAR BIOLOGY. (Students must register for both 
EXMD 604D1 and EXMD 604D2) (No credit will be given for this 
course unless both EXMD 604D1 and EXMD 604D2 are success-
fully completed in consecutive terms) Offered in conjunction with 
the Université de Montréal: given Thursdays 16:00-18:00 at the 
Institut de Recherches Cliniques de Montréal, 110 Pine West. The 
course is bilingual with abstracts in the other language supplied; 
more than half the lectures are in French. Aimed at bringing stu-
dents up to date on recent aspects of cell and molecular biology 
including cellular organelle structure and function, molecular 
genetics, signal transduction, cell growth and development, and 
immunology.

EXMD 607 MOLECULAR CONTROL OF CELL GROWTH. (3) A course 
for graduate students in Experimental Medicine, Biology, Bio-
chemistry, Microbiology and Physiology, dealing with molecular 
control in normal and malignant cell growth, including cell cycle 
and physiological controls (nutritional and hormonal), mammalian 
DNA replication, viral effects on host cell growth for DNA and RNA-
tumour viruses and oncogenes, and tissue and organ growth-
renewal mechanisms.

★ EXMD 608 MOLECULAR EMBRYOLOGY. (3) (Prerequisite: Stud-
ents must come with a solid background in molecular biology.) 
(Offered in conjunction with the Department of Oncology) Modern 
molecular approaches in animal embryogenesis, with emphasis 
on embryonic patterning, organogenesis, and cell-cell communi-
cation.

EXMD 610 BIOMEDICAL METHODS IN MEDICAL RESEARCH. (3) A 
course intended to introduce students to a variety of basic tech-
niques used in medical research. Lectures and demonstrations 
given on the purification of biologically active substances by chro-
natography, analysis of compounds by spectrophotometry and 
mass spectrometry, immunological techniques, centrifugation, 
cell culture, binding of hormones to receptors, molecular biology, 
tumour biology and electron microscopy.

★ EXMD 611D1 (3), EXMD 611D2 (3) SEMINARS IN ONCOLOGY. 
(Students must register for both EXMD 611D1 and EXMD 611D2) 
(No credit will be given for this course unless both EXMD 611D1 
and EXMD 611D2 are successfully completed in consecutive 
terms) A course in cancer and allied fields aimed at familiarizing 
students with the current literature relevant to the biology of can-
cer, developing their critical abilities and providing an opportunity 
for presenting seminars to their peers.

EXMD 614 ENVIRONMENTAL CARCINOGENESIS. (3) Methods for 
identification of carcinogens, including epidemiological studies, 
animal modelling and molecular biomarkers, and characteristics of 
known environmental carcinogens (viruses, chemical and physical 
agents and diet). Environmental factors will be placed in the con-
text of overall cancer risk, which involves interaction of genetics, 
host and environment.

EXMD 615 MEMBRANE CARBOHYDRATES. (3) (Winter) The struc-
ture, function and biosynthesis of glycoproteins, glycolipids and 
glycaminoglycans, and the biological role of complex carbohy-
drates at the cell surface.

EXMD 616 MOLECULAR AND CELL BIOLOGY TOPICS. (3) Structured 
and instructor-directed student presentations and discussions of 
recent advances in molecular and cellular biology. The course will 
reinforce the students' knowledge of currently major areas of 
investigation, with a focus on human disease and medical applica-
tions. Important recent publications will extend material from text-
book and review articles.

EXMD 617 WORKSHOP IN CLINICAL TRIALS 1. (1) Intensive day-
long workshop discussing industrial/Academic/Governmental 
interactions and the design, testing and approval of drugs.

EXMD 618 WORKSHOP IN CLINICAL TRIALS 2. (1) Intensive day-
long workshop discussing the role of the physician in drug testing.

EXMD 619 WORKSHOP: CLINICAL TRIALS 3. (1) Intensive day-long 
workshop discussing the pharmaco economics of drug design and 
testing.

EXMD 620 CLINICAL TRIALS AND RESEARCH 1. (1) Intensive day-
long workshop discussing a topical subject or recent advance rel-
evant to clinical research and the conduct of clinical trials.

EXMD 621 SEMINARS IN BIOMEDICAL RESEARCH 1. (3)

EXMD 622 SEMINARS IN BIOMEDICAL RESEARCH 2. (3)

EXMD 624 SEMINARS IN BIOMEDICAL RESEARCH 4. (3)

EXMD 625 CLINICAL TRIALS AND RESEARCH 2. (1) Intensive day-
long workshop discussing a topical subject or recent advance rel-
evant to clinical research and the conduct of clinical trials.

EXMD 626 CLINICAL TRIALS AND RESEARCH 3. (1) Intensive day-
long workshop discussing a topical subject or recent advance rel-
evant to clinical research and the conduct of clinical trials.

EXMD 627 PRACTICUM IN CLINICAL RESEARCH. (18) Six-step pro-
gram: 1. Identification of the problem; 2. Experimental design; 3. 
Protocol development; 4. Execution of the protocol; 5. Data analy-
sis; 6. Generation of final report with active "clerkship" participation 
in each component with team leaders and experts designated for 
each stage.

EXMD 627D1 (9), EXMD 627D2 (9) PRACTICUM IN CLINICAL 
RESEARCH. (Students must register for both EXMD 627D1 and 
EXMD 627D2) (No credit will be given for this course unless both 
EXMD 627D1 and EXMD 627D2 are successfully completed in 
consecutive terms) (EXMD 627D1 and EXMD 627D2 together are 
equivalent to EXMD 627) Six-step program: 1. Identification of the 
problem; 2. Experimental design; 3. Protocol development; 4. Exe-
cution of the protocol; 5. Data analysis; 6. Generation of final report 
with active "clerkship" participation in each component with team 
leaders and experts designated for each stage.

EXMD 628 QUALITATIVE RESEARCH METHODOLOGY. (3) (Restric-
tion: permission of instructor) This course explores both broad and 
specific theoretical and methodological issues in qualitative 
research inquiry. It will discuss both traditional and contemporary 
paradigmatic thought underlying the qualitative enterprise and it 
will introduce the student to some qualitative techniques and strat-
egies for collecting, analyzing and reporting data.

EXMD 629 REPRODUCTIVE MEDICINE AND ASSISTED REPRODUCTIVE 
TECHNOLOGY. (3) (Prerequisite: Permission of instructor.) Recent 
advances in reproductive medicine and assisted reproductive 
technologies (ART).
DEPARTMENT OF PHYSIOLOGY

PHGY 513 CELLULAR IMMUNOLOGY. (3) (Winter) (3 hours lectures plus term paper) (Prerequisite: MIMM 314, or permission of the instructor) This course deals with cellular interactions, regulation and effector mechanisms of the normal immune response in relation to diseases and pathogenic processes. It is taught at an advanced level.

PHGY 515 PHYSIOLOGY OF BLOOD 1. (3) (Fall) (2 hours lecture plus 1 hour seminar weekly) (Prerequisite: PHGY 513 or PHGY 312 or permission of the instructor) Study of the cell and molecular physiology of hemostasis and its pathophysiology (bleeding and thrombosis). Emphasizes on molecular mechanisms regulating clot formation, fibrinolysis, and cell adhesion/aggregation. Experimental approaches and specific clinical disorders will be analyzed. Weekly discussions, and a major term paper.

PHGY 516 PHYSIOLOGY OF BLOOD 2. (3) (Winter) (2 hours lecture plus 1 hour seminar weekly) Bone marrow hematopoiesis, with emphasis on regulation of stem cell proliferation and differentiation along hematopoietic pathways. Formation and differentiation of red and white blood cells and some of the diseases associated with hematopoiesis will be covered. Emphasis will be given to the molecular mechanisms involved in the normal and pathological conditions.

PHGY 517 ARTIFICIAL INTERNAL ORGANS. (3) (Winter) (Prerequisite: Undergraduate; permission of instructors,) Physiological, bioengineering, chemical and clinical aspects of artificial organs including basic principles and physiopathology of organ failure. Examples: oxygenator, cardiac support, vascular substitutes, cardiac pacemaker, biomaterials and tissue engineering, biocompatibility.

PHGY 518 ARTIFICIAL CELLS. (3) (Fall) (Prerequisite: Undergraduate; permission of instructors,) Physiology, biotechnology, chemistry and biomedical application of artificial cells, blood substitutes, immobilized enzymes, microorganisms and cells, hemoperfusion, artificial kidneys, and drug delivery systems. PHGY 517 and PHGY 518 when taken together, will give a complete picture of this field. However, the student can select one of these.

DEPARTMENT OF MICROBIOLOGY AND IMMUNOLOGY

MIMM 509 INFLAMMATORY PROCESSES. (3) (Winter) (3 hours of seminar) (Prerequisite: MIMM 314.) (Corequisite: PHGY 513 or MIMM 414) (This course will be given in conjunction with the Division of Experimental Medicine) This course concentrates on the non-specific aspects of the immune response, an area which is not adequately covered by the other immunology courses presented at the university. Interactions between guest researchers (from McGill and other universities) and students will be furthered.

SCHEDULED GRADUATE SEMINARS

Royal Victoria Hospital (1 hour per week):
- Respiratory Research
- Immunopathology
- Endocrinology and Metabolism
- Haematology Research
- Renal and Electrolyte Seminar
- Transplantation Conference
- Gastroenterology Conference
- Diabetes Conference
- Chest/Cardiac Disease Conference
- Clinical Endocrinology Conference
- Steroid Biochemistry Research
- Haematology Clinical Conference
- Endocrinology and Metabolism Research Conference
- Clinical Immunology Conference
- Arthritis Conference
- Internal Medicine
- Dermatology Research
- University Clinic Seminar
- Cardiology Research

Montreal General Hospital (1 hour per week, or in some cases alternate weeks):
- Gastroenterology Conference
- Respiratory Diseases
- Dermatology
- Internal Medicine
- Allergy and Immunology
- Infectious Diseases
- Combined Staff Conference
- Haematology
- Arthritis
- Metabolic Diseases
- Cardiac Disease
- Neurology — Neurosurgery
- University Medical Clinic Seminar

52 Microbiology and Immunology

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Chair — G.J. Matlashewski

52.1 Staff

Professors
Z. Ali-Khan; B.Sc.(Bilar), M.Sc.(Karachi), Ph.D.(Tulane)
M.G. Baines; B.Sc., M.Sc., Ph.D.(Qu.)
J.W. Coulton; B.Sc.(Tor.), M.Sc.(Calg.), Ph.D.(W. Ont.)
J. Hiscott; B.Sc., M.Sc., Ph.D.(W. Ont.)
G.J. Matlashewski; B.Sc(C'dia), Ph.D.(Ohio)
R.A. Murgita; B.Sc.(Maine), M.S.(Vermont), Ph.D.(McG.)
M.A. Wainberg; B.Sc.(McG.), Ph.D.(Col.)

Associate Professors
A. Berghuis; M.Sc.(The Netherl.), Ph.D.(Br. Col.)
D.J. Briedis; B.A., M.D.(Johns H.)
B. Cousineau; B.Sc., M.Sc., Ph.D.(Montr.)
S. Fournier; Ph.D.(Montr.)
M. Gote; Ph.D.(Max Planck)
H. Le Moual; Ph.D.(Montr.)

M. Gotte; Ph.D.(Max Planck)
Z. Ali-Khan; B.Sc.(Bilar), M.Sc.(Karachi), Ph.D.(Tulane)
M.G. Baines; B.Sc., M.Sc., Ph.D.(Qu.)
J.W. Coulton; B.Sc.(Tor.), M.Sc.(Calg.), Ph.D.(W. Ont.)
J. Hiscott; B.Sc., M.Sc., Ph.D.(W. Ont.)
G.J. Matlashewski; B.Sc(C'dia), Ph.D.(Ohio)
R.A. Murgita; B.Sc.(Maine), M.S.(Vermont), Ph.D.(McG.)
M.A. Wainberg; B.Sc.(McG.), Ph.D.(Col.)

52.1 Staff
52.2 Programs Offered

The Department offers graduate programs leading to the degrees of M.Sc. and Ph.D. Each program is tailored to fit the needs and backgrounds of individual students.

The Department concentrates on four key areas of research: cellular and molecular immunology, microbial physiology and genetics, molecular biology of viruses, and medical microbiology.

52.3 Admission Requirements

Master’s

Candidates are required to hold a B.Sc. degree in microbiology and immunology, biology, biochemistry or another related discipline; those with the M.D., D.D.S. or D.V.M. degrees are also eligible to apply. The minimum grade point average for acceptance into the program is 3.2 (out of 4.0). 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. Before acceptance, 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. An institutional version of the TOEFL is not acceptable. Applications will not be considered if a TOEFL or IELTS test result is not available.

The Test of English as a Foreign Language (TOEFL):
- Paper-Based Test (PBT): a minimum score of 575
- Computer-Based Test (CBT): a minimum score of 230
- Internet-Based Test (IBT): a minimum overall score of 95
- The International English Language Testing System (IELTS): a minimum overall band score of 7.0

The TOEFL Institution Code for McGill University is 0935.

Ph.D.

Students who have satisfactorily completed a M.Sc. degree in microbiology and immunology, a biological science, or biochemistry, or highly qualified students enrolled in the departmental M.Sc. program, may be accepted into the Ph.D. program provided they meet its standards.

52.4 Application Procedures

Applications will be considered upon receipt of:
1. application form;
2. two official transcripts;
3. two letters of reference;
4. $100 application fee;
5. TOEFL test (GRE not required but recommended).

All information is to be submitted directly to the Student Affairs Officer in the Department of Microbiology and Immunology. All applicants are encouraged to approach academic staff members during or before the application process since no applicants are accepted without a supervisor.

McGill’s online application form for graduate program candidates is available at www.mcgill.ca/gradapplicants/apply.

Dates for Guaranteed Consideration

For dates for guaranteed consideration, please consult the following website: www.mcgill.ca/gradapplicants/programs. Then select the appropriate program.

All applications and documents must be submitted by the dates for guaranteed consideration.

52.5 Program Requirements

M.Sc. in Microbiology and Immunology (Thesis) (45 credits)

Required Courses (15 credits)

- MIMM 611 (3) Graduate Seminars 1
- MIMM 612 (3) Graduate Seminars 2
- MIMM 613 (3) Current Topics 1
- MIMM 614 (3) Current Topics 2
- MIMM 615 (3) Current Topics 3

Complementary Courses (6 credits)

6 credits, two of the following courses:

- MIMM 616 (3) Reading and Conference 1
- MIMM 617 (3) Reading and Conference 2
- MIMM 618 (3) Reading and Conference 3
- MIMM 619 (3) Reading and Conference 4

Thesis Component – Required (24 credits)

- MIMM 697 (8) Master’s Research 1
- MIMM 698 (8) Master’s Research 2
- MIMM 699 (8) Master’s Research 3

Other courses may be required to strengthen the student’s background.

Ph.D.

Each Ph.D. student has an advisory committee (three professors including research advisor) that meets yearly to consider the student’s progress. Candidates will be judged principally on their research ability and on the presentation of a satisfactory thesis.

Ph.D. in Microbiology and Immunology

Required Courses (18 credits)

- MIMM 701 (0) Comprehensive Examination-Ph.D. Candidate
- MIMM 611 (3) Graduate Seminars 1
- MIMM 612 (3) Graduate Seminars 2
- MIMM 713 (3) Graduate Seminars 3
- MIMM 613 (3) Current Topics 1
- MIMM 614 (3) Current Topics 2
- MIMM 615 (3) Current Topics 3

Complementary Courses (minimum 12 credits)

three courses from List A and a minimum of three consecutive courses from List B.
## 52.6 Courses

Students preparing to register should consult Class Schedule on the web at [www.mcgill.ca/student-records/register/class-schedule](http://www.mcgill.ca/student-records/register/class-schedule) for the most up-to-date list of courses available; courses may have been added, rescheduled or cancelled after this Calendar was published. Class Schedule lists courses by term and includes days, times, locations, and names of instructors.

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

**MIMM 509 INFLAMMATORY PROCESSES.** (3) (Winter) (3 hours of seminar) (Prerequisite: MIMM 314.) (Corequisite: PHGY 513 or MIMM 414) (This course will be given in conjunction with the Division of Experimental Medicine) This course concentrates on the non-specific aspects of the immune response, an area which is not adequately covered by the other immunology courses presented at the university. Interactions between guest researchers (from McGill and other universities) and students will be furthered.

**MIMM 611 GRADUATE SEMINARS 1.** (3)

**MIMM 612 GRADUATE SEMINARS 2.** (3) (Restriction: M.Sc. students - presentation of two seminar topics throughout the course of their degree program)

**MIMM 613 CURRENT TOPICS 1.** (3)

**MIMM 614 CURRENT TOPICS 2.** (3)

**MIMM 615 CURRENT TOPICS 3.** (3) M.Sc. Students (discussion groups with guest speakers).

**MIMM 616 READING AND CONFERENCE 1.** (3) (Restriction: M.Sc. students - two of these courses required throughout the course of their degree program) Student presentations, taken from current literature, are concerned with aspects of a central topic. Presentations are designed to be informal and to generate student discussions. Topic will change from term to term.

**MIMM 617 READING AND CONFERENCE 2.** (3) (Restriction: M.Sc. students - two of these courses required throughout the course of their degree program) Student presentations, taken from current literature, are concerned with aspects of a central topic. Presentations are designed to be informal and to generate student discussions. Topic will change from term to term.

**MIMM 618 READING AND CONFERENCE 3.** (3) (Restriction: M.Sc. students - two of these courses required throughout the course of their degree program) Student presentations, taken from current literature, are concerned with aspects of a central topic. Presentations are designed to be informal and to generate student discussions. Topic will change from term to term.

**MIMM 619 READING AND CONFERENCE 4.** (3) (Restriction: M.Sc. students - two of these courses required throughout the course of their degree program) Student presentations, taken from current literature, are concerned with aspects of a central topic. Presentations are designed to be informal and to generate student discussions. Topic will change from term to term.

**MIMM 697 MASTER'S RESEARCH 1.** (8) (Restriction: M.Sc. students) Independent work under the direction of a supervisor on a research problem in the student's designated area of research.

**MIMM 698 MASTER'S RESEARCH 2.** (8) (Restriction: M.Sc. students) Independent work under the direction of a supervisor on a research problem in the student's designated area of research.

**MIMM 699 MASTER'S RESEARCH 3.** (8) (Restriction: M.Sc. students) Independent work under the direction of a supervisor on a research problem in the student's designated area of research.

**MIMM 701 COMPREHENSIVE EXAMINATION-PH.D. CANDIDATE.** (0)

**MIMM 701D1 (0), MIMM 701D2 (0) COMPREHENSIVE EXAMINATION-PH.D. CANDIDATE.** (Students must also register for MIMM 701D2) (No credit will be given for this course unless both MIMM 701D1 and MIMM 701D2 are successfully completed in consecutive terms) (MIMM 701D1 and MIMM 701D2 together are equivalent to MIMM 701)

**MIMM 713 GRADUATE SEMINARS 3.** (3) (Restriction: Ph.D. students) Presentation of a maximum of three seminars topics throughout the course of their degree program.

**MIMM 721 PH.D. RESEARCH PROGRESS REPORT 1.** (1) Each Ph.D. student has an advisory committee (3 professors including research advisor) that meets yearly to consider student's progress. Students submit a 6-page progress report to the committee and give a 20-minute oral presentation, discussing data obtained and future research plans. Committee gives advice on progress and fine-tuning the research project.

**MIMM 721D1 (0.5), MIMM 721D2 (0.5) PH.D. RESEARCH PROGRESS REPORT 1.** (Students must also register for MIMM 721D2) (No credit will be given for this course unless both MIMM 721D1 and MIMM 721D2 are successfully completed in consecutive terms) (MIMM 721D1 and MIMM 721D2 together are equivalent to MIMM 721) Each Ph.D. student has an advisory committee (3 professors including research advisor) that meets yearly to consider student's progress. Students submit a 6-page progress report to the committee and give a 20-minute oral presentation, discussing data obtained and future research plans. Committee gives advice on progress and fine-tuning the research project.

**MIMM 722 PH.D. RESEARCH PROGRESS REPORT 2.** (1) Each Ph.D. student has an advisory committee (3 professors including research advisor) that meets yearly to consider student's progress. Students submit a 6-page progress report to the committee and give a 20-minute oral presentation, discussing data obtained and future research plans. Committee gives advice on progress and fine-tuning the research project.

**MIMM 722D1 (0.5), MIMM 722D2 (0.5) PH.D. RESEARCH PROGRESS REPORT 2.** (Students must also register for MIMM 722D2) (No credit will be given for this course unless both MIMM 722D1 and MIMM 722D2 are successfully completed in consecutive terms) (MIMM 722D1 and MIMM 722D2 together are equivalent to MIMM 722) Each Ph.D. student has an advisory committee (3 professors including research advisor) that meets yearly to consider student's progress. Students submit a 6-page progress report to the committee and give a 20-minute oral presentation, discussing data obtained and future research plans. Committee gives advice on progress and fine-tuning the research project.

**MIMM 723 PH.D. RESEARCH PROGRESS REPORT 3.** (1) Each Ph.D. student has an advisory committee (3 professors including research advisor) that meets yearly to consider student's progress. Students submit a 6-page progress report to the committee and give a 20-minute oral presentation, discussing data obtained and future research plans. Committee gives advice on progress and fine-tuning the research project.

**MIMM 723D1 (0.5), MIMM 723D2 (0.5) PH.D. RESEARCH PROGRESS REPORT 3.** (Students must also register for MIMM 723D2) (No credit will be given for this course unless both MIMM 723D1 and MIMM 723D2 are successfully completed in consecutive terms) (MIMM 723D1 and MIMM 723D2 together are equivalent to MIMM 723) Each Ph.D. student has an advisory committee (3 professors including research advisor) that meets yearly to consider student's progress. Students submit a 6-page progress report to the committee and give a 20-minute oral presentation, discussing data obtained and future research plans. Committee gives advice on progress and fine-tuning the research project.
MIMM 724 Ph.D. Research Progress Report 4 (1) Each Ph.D. student has an advisory committee (3 professors including research advisor) that meets yearly to consider student's progress. Students submit a 6-page progress report to the committee and give a 20-minute oral presentation, discussing data obtained and future research plans. Committee gives advice on progress and fine-tuning the research project.

MIMM 724D1 (0.5), MIMM 724D2 (0.5) Ph.D. Research Progress Report 4. (Students must also register for MIMM 724D2) (No credit will be given for this course unless both MIMM 724D1 and MIMM 724D2 are successfully completed in consecutive terms) (MIMM 724D1 and MIMM 724D2 together are equivalent to MIMM 724) Each Ph.D. student has an advisory committee (3 professors including research advisor) that meets yearly to consider student's progress. Students submit a 6-page progress report to the committee and give a 20-minute oral presentation, discussing data obtained and future research plans. Committee gives advice on progress and fine-tuning the research project.

#### 53 Mining and Materials Engineering

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**Mining Engineering**
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**Materials Engineering**
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**Department Chair** — Steve Yue

**Director, Graduate Program** — George P. Demopoulos

**Graduate Program Coordinator** — Barbara Hanley

#### 53.1 Staff

**Emeritus Professors**
- John E. Gruzeski; B.Sc., M.Sc.(Qu.), Ph.D.(Tor.), Eng., F.C.I.M., F.A.S.M. (Gerald G. Hatch Emeritus Professor)
- William M. Williams, B.Sc., M.Sc.(Brist.), Ph.D.(Tor.), Eng. (Henry Birks Emeritus Professor)

**Professors**
- George P. Demopoulos; Dipl.Engr.(NTU Athens), M.Sc., Ph.D.(McG.), Eng., F.C.I.M. (Gerald G. Hatch Faculty Professor)
- Roussos Dimitrakopoulos; B.Sc.(Thessaloniki), M.Sc.(Alta.), Ph.D.(École Poly., Montr.) (Canada Research Chair I)
- F.C.I.M., F.R.S.C. (Gerald G. Hatch 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.(McG.), M.Eng.
- Jerzy Szpunar; B.Sc., M.Eng., Ph.D., D.Sc.(Krakow) (Gerald Hatch Faculty Professor)
- Steve Yue; B.Sc., Ph.D.(Leeds) (James McGill Professor) (Lorne Trottier Chair in Aerospace Engineering)

**Associate Professors**
- Mainul Hasan; B.Eng.(Dhaka), M.Eng.(Dhahran), Ph.D.(McG.)
- Mihriban Pekguleryuz; B.Sc., M.Eng.(Flor.), Ph.D.(McG.)

**Assistant Professors**
- Mathieu Brochu; B.Eng.(Laval), Ph.D.(McG.) (Canada Research Chair II)
- Richard Chromik; B.Sc.(Penn St.), M.Sc., Ph.D.(SUNY, Binghampton)
- In-Ho Jung; B.Sc., M.Sc.(POSTECH); Ph.D.(École Poly., Montr.) (Gerald Hatch Faculty Fellow)
- Showan Nazhat; B.Eng., M.Sc., Ph.D.(Lon.) (Gerald Hatch Faculty Fellow)

**Lecturers**
- John Mossop; B.Eng.(McG.)
- Florence Paray; B.Eng.(CSP), M.Eng., Ph.D.(McG.)

**Adjunct Professors**
- Mostafa Benzaazoua, Robin Drew, Daryoush Emadi, Elhamchi Essadiqi, Bryn Harris, Ahmad Hemami, Mohammad Jahazi, Raad Jassim, Wynand Kleingeld, Louis-Philippe Lefebvre, Martin Pugh, Serge Vézina

#### 53.2 Programs Offered

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 and Nanomaterials.

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).

#### 53.3 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.
Academic Units

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.

53.4 Application Procedures

Applications will be considered upon receipt of:
1. application form;
2. two official copies of transcripts;
3. letters of reference;
4. CAD$100 application fee;
5. TOEFL test results.

All information is to be submitted directly to the Graduate Secretary in the Department of Mining and Materials Engineering.

Dates for Guaranteed Consideration

For dates for guaranteed consideration, please consult the following website: www.mcgill.ca/gradapplicants/apply. Then select the appropriate program.

McGill's online application form for graduate program candidates is available at www.mcgill.ca/gradapplicants/apply.

53.5 Program Requirements

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.

Required Course (6 credits)

MIME 673 (6) Mining Engineering Seminar

Complementary Courses (24 credits)

24 credits selected in consultation with the Program Advisor.

M.Eng. and M.Sc. (Thesis) Degrees in Mining and Materials Engineering

The programs consist of 45 credits of coursework, seminars and research. The candidate must pass a minimum number of courses, normally equivalent to 12 credits, chosen in consultation with a supervisor and based on his/her academic background and research interests.

In addition, the candidate must participate in an appropriate research seminar course and submit an acceptable thesis based on a series of successfully completed research courses.

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

M.Eng. in Mining and Materials Engineering (Non-Thesis) (45 credits)

Students registered in this program specialize either in mining engineering or materials engineering. The program consists of a minimum 12 credits of departmental graduate-level courses, 6-15 credits of project courses, a 6-credit seminar course and enough additional courses chosen from within or outside the Department to complete the 45 credit requirement. The external courses are subject to departmental approval. The program is established in consultation with the Program Advisor.

Required Course (6 credits)

MIME 673 or (6) Mining Engineering Seminar

MIME 670 (6) Research Seminar

Complementary Courses (24 to 33 credits)

12 credits of graduate-level MIME courses.
12 to 21 credits of graduate-level courses from within or, subject to departmental approval, outside the Department.

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

or

MIME 680 (6) Metallurgical/Materials Engineering Project 1

MIME 681 (6) Metallurgical/Materials Engineering Project 2

MIME 682 (3) Metallurgical/Materials Engineering Project 3

M.Eng. in Mining and Materials Engineering (Project) – Environmental Engineering Concentration (45 credits)

Students are strongly encouraged to consult with the Graduate Program Director prior to enrolling in the program. The program consists of a minimum of 45 credits, of which a minimum of 6 and a maximum of 12 credits is required for a research or design project related to the environment. The balance is earned by coursework.

Required Core Courses (6 credits)

CIVE 615 (3) Environmental Engineering Seminar

CHEE 591 (3) Environmental Bioremediation

Complementary Courses (minimum 22 credits)

Data analysis course:

AEMA 611 or (3) Experimental Design

CIVE 555 or (3) Environmental Data Analysis

PSYC 650 (3) Advanced Statistics 1

Toxicology course:

OCCH 612 or (3) Principles of Toxicology

OCCH 616 (3) Occupational Hygiene

Water pollution engineering course:

CIVE 651 or (4) Theory: Water / Wastewater Treatment

CIVE 652 or (4) Biological Treatment: Wastewaters

CIVE 660 (4) Chemical and Physical Treatment of Waters

Air pollution engineering course:

CHEE 592 or (3) Industrial Air Pollution Control

MECH 534 (3) Air Pollution Engineering

Soil and water quality management course:

BREE 533 or (3) Water Quality Management

CIVE 686 (4) Site Remediation

Environmental impact course:

GEOG 501 or (3) Modelling Environmental Systems

GEOG 551 (3) Environmental Decisions

or approved graduate-level alternative

Environmental policy course:

URBP 506 (3) Environmental Policy and Planning or approved graduate-level alternative
Elective courses (minimum 11 credits)

Another project course and/or engineering or non-engineering graduate courses subject to approval.

The relevant project course in Mining and Materials Engineering is one of the following:

- MIME 628 or (6) Mineral Engineering Project 1
- MIME 681 (6) Metallurgical/Materials Engineering Project 2

Required Project Course (6 credits)

one of the following:

- MIME 628 (6) Mineral Engineering Project 1
- MIME 680 (6) Metallurgical/Materials Engineering Project 1

Ph.D. in Mining and Materials Engineering

A candidate for this degree must pass 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 and related topics.

53.6 Courses

Students preparing to register should consult Class Schedule on the web at www.mcgill.ca/student-records/register/class-schedule for the most up-to-date list of courses available; courses may have been added, rescheduled or cancelled after this Calendar was published. Class Schedule lists courses by term and includes days, times, locations, and names of instructors.

Courses with numbers ending D1 and D2 are taught in two consecutive terms (most commonly Fall and Winter). Students must register for both the D1 and D2 components. No credit will be given unless both components (D1 and D2) are successfully completed in consecutive terms.

Courses with numbers ending N1 and N2 are taught in two non-consecutive terms. Students must register for both the N1 and N2 components. No credit will be given unless both components (N1 and N2) are successfully completed in a twelve-month period.

The courses in this Department have been numbered to conform with the following classification system. The first digit represents the level of instruction. The last two digits are classified as follows:

- 01 to 19 technical courses
- 20 to 39 mining courses
- 40 to 49 mineral processing courses
- 50 to 59 extractive and process metallurgy courses
- 60 to 69 physical metallurgy and materials courses
- 70 to 79 seminars

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

MIME 512 CORROSION AND DEGRADATION OF MATERIALS. (3) (3-3-3) (Prerequisites: MIME 261 and MIME 352 or permission of instructor.) (Restriction: Not open to students who have taken MIME 412.) Electrochemical theory of metal corrosion, Evans Diagrams, corrosion rate controlling mechanisms, mixed corrosion, alloying effects, passivation. Discussion and analysis of the various forms of corrosion. Corrosion prevention methods. Oxidation of alloys-mechanisms and kinetics. Degradation of ceramics and polymers. Case studies.

MIME 513 MINE PLANNING OPTIMIZATION UNDER UNCERTAINTY. (3) (Summer) (3-3-3) (Prerequisite: Permission of instructor.) (This course in the Faculty of Engineering is open only to McGill students.) Strategic mine planning and optimization under uncertain demand and supply. Modern optimization techniques in mine design and production scheduling. Metal supply and orebody modelling. Market forecasting and planning with flexibility. Valuing information. Stochastic mine optimization and applications in open pit and underground metal mines.

MIME 520 STABILITY OF ROCK SLOPES. (3) (3-0-6) (Prerequisite: permission of instructor.) The properties of rock masses and of structural discontinuities. Influence of geological structure on stability. Linear, non-linear, and wedge failures. Site investigations. Methods of slope stabilization.

MIME 521 STABILITY OF UNDERGROUND OPENINGS. (3) (3-3-3) (Prerequisite: permission of instructor) (This course in the Faculty of Engineering is open only to McGill students.) The properties of rock masses and stability classification systems. The influence and properties of geological structural features. Stability related to the design of underground openings and mining systems. Site investigations. Methods of stabilization.


MIME 526 MINERAL ECONOMICS. (3) (3-2-5) (Prerequisite: MIME 310 or equivalent) Mineral project evaluation techniques and applications. Topics covered include grade-tonnage relationships, capital and operating cost estimation techniques, assessment of mineral market conditions, taxation, discounted cash flow analysis, risk analysis, and optimization of project specifications with respect to capacity and cutoff grade.

MIME 528 MINING AUTOMATION. (3) (3-3-3) (Prerequisite: MIME 426) System analysis and design in the frequency domain. Review of optimization methods. Mining system modelling applied to rock cutting, materials transport, and bunkerage, pitch, yaw and roll steering of mining machines. Control and robotics: digitization, discrete systems, sensors, actuators and real time algorithms. Data communication in mines. Simulation exercises.

MIME 544 ANALYSIS: MINERAL PROCESSING SYSTEMS 1. (3) (2-3-4) (Prerequisite (Undergraduate): MIME 341) The course covers three main topics: principles of separation, including data presentation, properties of recovery/ yield plots, technical and economic efficiency and identification of limits to separation; column flotation, hydrodynamics of collection and froth zones, mixing, scale-up and design, measurements and control; surface and electrochemistry, including absorption, surface charge, coagulation, electron transfer reactions, electrochemistry in plant practice.

MIME 545 ANALYSIS: MINERAL PROCESSING SYSTEMS 2. (3) (4-2-3) (Prerequisite (Undergraduate): MIME 341) Gold recovery (as a Professional Development Seminar): methods of recovery (gravity, flotation, cyanidation), refractory gold (roasting, pressure oxidation, bacterial leaching), dissolved gold recovery (Merrill-Crowe) and activated carbon methods. Sampling: definition of errors, sample extraction, size, and processing. Mass balancing: basic considerations, definition of networks, software. Blending: auto-correlation functions, transfer functions, blending systems. Effect of feed variability.
MIME 551 ELECTROCHEMICAL PROCESSING. (3) (3-2-4) (Prerequisite: MIME 352) Characterization of aqueous, fused salt and solid electrolytes; laws of electrolysis; ion transport mechanisms; interfacial phenomena (electrolyte-electrolyte, electrode-electrolyte); reversible cells and potentials; electrode kinetics, overpotential and potential-current laws; industrial applications; electrolytic winning and refining, electroplating, surface cleaning and coating, electrodialysis and electrochemical sensors.

MIME 552 ENVIRONMENTAL CONTROLS IN METALLURGICAL PLANTS. (3) (3-3-3) (Prerequisites: MIME 341, 350 and 352 or permission of instructor.) (Restriction: Not open to students who have taken MIME 451.) Generation, characterization and abatement of pollutants in the minerals and metals industries. Environmental regulations. Control technologies for gaseous, aqueous and solid waste streams. Heavy metal removal, arsenic control, cyanide destruction, prediction of acidic drainage, greenhouse gas effects, control of SO2 and NOx emissions, destruction of organic pollutants.

MIME 553 IMPACT OF MATERIALS PRODUCTION. (3) (3-0-6) (Prerequisite: Permission of Instructor.) Impact on the environment of the production of major materials. Pollution control practices, emerging technologies, cost, resources and conservation. Review of flowsheets for various production methods. Analysis of the use of materials, prices, consumption, fabrication, and recycling of waste materials.

MIME 556 SUSTAINABLE MATERIALS PROCESSING. (3) (3-1-5) (Prerequisite: Permission of Instructor.) Sustainability, population and environment impact, environmental impact indicators, materials flows, enthalpy flows, the carbon cycle, materials intensity, energy intensity, global warming potential, acidification potential. FAC-TOR-Two, -Four and -Ten, life-cycle-inventory/assessment, end-of-pipe strategies, supply-chain and flow-sheet redesign, recycling, waste treatment and materials case studies.

MIME 558 ENGINEERING NANOMATERIALS. (3) (3-2-4) (Prerequisite: MIME 260 or MIME 261 and MIME 362 or equivalent or permission of instructor.) Aspects of manufacturing bulk-nanostructured materials. Fabrication of nanosized and nanostructured precursors (metals, ceramics, intermetallics, CNT). Reactivity, handling and safety of nano-particles. Processes developed to fabricate bulk nanostructured materials (pressing and sintering, hot pressing and extrusion, ECAP, electrodeposition, spray forming, shockwave compaction). Characterisation of nanostructures. Physical and mechanical properties of nanomaterials.

MIME 559 ALUMINUM PHYSICAL METALLURGY. (3) (3-3-3) (Prerequisites: MIME 360 and MIME 362, or permission of instructor.) Crystal structure, deformation characteristics, strengthening and softening mechanisms, hot and cold working. Microstructure property relationships in aluminum alloys. Physical metallurgy of aluminum casting alloys and their uses. Properties, and physical metallurgy of aluminum wrought alloys and their industrial applications.

MIME 560 JOINING PROCESSES. (3) (3-3-3) (Prerequisite: MIME 200, MIME 360) Physics of joining; interfacial requirements; energy sources, chemical, mechanical and electrical; homogeneous hot-joining, arc-, Mg-, Ti-, gas-, thermit- and Plasma-welding; Autogeneous hot-joining, forge-, pressure-, friction-, explosive-, electron beam- and laser-welding; Heterogeneous hot-joining, brazing, soldering, diffusion bonding; Heterogeneous cold joining, adhesives, mechanical fastening; Filler materials; Joint metallurgy; Heat affected zone, non-metallic systems; Joint design and economics; defects and testing methods.

MIME 561 ADVANCED MATERIALS DESIGN. (3) (0-4-5) (Prerequisite: MIME 362 or equivalent) Advanced topics in materials design problems. Discussion and laboratory work, supplemented by detailed technical reports. Special attention is given to selection, design and failure problems in various materials systems.

MIME 563 HOT DEFORMATION OF METALS. (3) (2-2-5) (Prerequisite: Undergraduate: MIME 360 and MIME 362) (Prerequisite (Graduate): MIME 362 or equivalent.) High temperature deformation processing of metallic materials. Topics include static and dynamic recrystallization, recovery, precipitation; effect of deformation on phase transformations and microstructural evolution during industrial processing. Mathematical modelling of microstructural evolution.

MIME 564 X-RAY DIFFRACTION ANALYSIS OF MATERIALS. (3) (2-3-4) (Prerequisite: MIME 317 or equivalent) The techniques of X-ray and neutron diffraction are discussed as applied to the minerals and materials production industries. Special emphasis is placed upon automated X-ray powder diffractometry as employed for determining the structure and composition of materials. The application of X-ray technique to studies of crystal structure, crystal orientation, residual stress, short-range order in liquid metals, phase diagram determination, order-disorder transformation and chemical analysis are presented.

MIME 565 AEROSPACE METALLIC-MATERIALS AND MANUFACTURING PROCESSES. (3) (3-0-6) (Prerequisites: MIME 260 or MIME 261 or Permission of Instructor.) (Restriction: Permission of Instructor required.) Integrated approach to aerospace materials, manufacturing and repair; materials and selection criteria for airframe, engines and coatings; repair concepts and technologies; application of new and emerging manufacturing technologies for the forming, joining and repair of aerospace products.

MIME 566 TEXTURE, STRUCTURE & PROPERTIES OF POLYCRYSTALLINE MATERIALS. (3) (2-3-4) (Prerequisite: MIME 317) Concepts and quantitative methods for the description of the structure of minerals and materials are discussed. Special emphasis is placed on experimental techniques of texture measurement. Procedures are demonstrated for the determination of texture and recrystallization textures in order to obtain the properties required for industrial products. Finally, the correlation between texture and the anisotropy of elastic, plastic and magnetic properties of engineering materials is described and analyzed.


MIME 569 ELECTRON BEAM ANALYSIS OF MATERIALS. (3) (2-3-4) (Prerequisite: MIME 317) Emphasis on operation of scanning and transmission electron microscopes. Topics covered are electron/specimen interactions, hardware description; image contrast description; qualitative and quantitative (ZAF) x-ray analysis; electron diffraction pattern analysis.


MIME 572 COMPUTATIONAL THERMODYNAMICS. (3) (3-0-6) (Prerequisite: MIME 212 or equivalent) Computational thermodynamics: materials design; process optimization; chemical reactions; phase diagrams; phase transformation; numerical simulation techniques.

MIME 576 ADVANCED STEELMAKING AND PROCESSING. (4) (4-5-3) (Prerequisite: Permission of instructor) (Restriction: Not open to students taking or have taken MIME 456) (This course is given with MIME 456) The role of thermodynamics and mass transport phenomena in the production of liquid iron and steel in blast furnaces and basic oxygen/electric arc furnaces, followed by refining, and continuous casting of steel sheet, blooms and billets. The physical metallurgy of steels. Thermo-mechanical processing, rolling, and strengthening mechanisms. Phases, microstructures, and associated mechanical properties.

MIME 606 MINERAL/METAL PRODUCTION AND MARKETING 1. (3) (Prerequisite: permission of instructor) Introduction of new topics in Mining and Materials Engineering.

MIME 608 MINERAL/METAL PRODUCTION AND MARKETING 2. (3) (Prerequisite: permission of instructor) Introduction of new topics in Mining and Materials Engineering.

MIME 620 ROCK MECHANICS 1. (3) A study of the effects of rock properties and ground stresses on problems in mine design.
MIME 621 ROCK MECHANICS 2. (3) The application of the principles of strength of materials to the analysis of problems in ground control.

MIME 623 GROUND FRAGMENTATION. (3) (Prerequisite: permission of instructor) (Course given once per academic year) A comprehensive review of principles and theory of explosives; rock information systems, cratering concepts and applications to mining.

MIME 624D1 (3), MIME 624D2 (3) MATERIALS HANDLING IN MINES. (Prerequisite: permission of instructor) (Students must register for both MIME 624D1 and MIME 624D2) (No credit will be given for this course unless both MIME 624D1 and MIME 624D2 are successfully completed in consecutive terms) A comprehensive review of materials handling systems used in open pit and underground mines. Review of system selection criteria, and analysis of the impact of particular systems on mine design.

MIME 624N1 MATERIALS HANDLING IN MINES. (3) (Students must also register for MIME 624N2) (No credit will be given for this course unless both MIME 624N1 and MIME 624N2 are successfully completed in a twelve month period) A comprehensive review of materials handling systems used in open pit and underground mines. Review of system selection criteria, and analysis of the impact of particular systems on mine design.

MIME 624N2 MATERIALS HANDLING IN MINES. (3) (Prerequisite: MIME 624N1) (No credit will be given for this course unless both MIME 624N1 and MIME 624N2 are successfully completed in a twelve month period) See MIME 624N1 for description.

MIME 625 APPLIED MINERAL ECONOMICS 1. (3) (Prerequisite: permission of instructor) A study of analytical techniques employed for project evaluation and decision-making in the mineral industry.

MIME 626 APPLIED GEOSTATISTICS. (3)

MIME 627 APPLIED MINERAL ECONOMICS 2. (3) (Prerequisite: permission of instructor) A study of the techniques employed in the analysis of government policy and the financing of projects in the mineral industry.

MIME 628 MINERAL ENGINEERING PROJECT 1. (6) A project of the student's choice, undertaken under the direct supervision of at least one staff member. The final mark is assessed on the basis of a final report that is examined internally, by the supervisor and at least one other staff member.

MIME 628D1 (3), MIME 628D2 (3) MINERAL ENGINEERING PROJECT 1. (Students must register for both MIME 628D1 and MIME 628D2) (No credit will be given for this course unless both MIME 628D1 and MIME 628D2 are successfully completed in consecutive terms) A project of the student's choice, undertaken under the direct supervision of at least one staff member. The final mark is assessed on the basis of a final report that is examined internally, by the supervisor and at least one other staff member.

MIME 628N1 MINERAL ENGINEERING PROJECT 1. (3) (Students must also register for MIME 628N2) (No credit will be given for this course unless both MIME 628N1 and MIME 628N2 are successfully completed in a twelve month period) A project of the student's choice, undertaken under the direct supervision of at least one staff member. The final mark is assessed on the basis of a final report that is examined internally, by the supervisor and at least one other staff member.

MIME 628N2 MINERAL ENGINEERING PROJECT 1. (3) (Prerequisite: MIME 628N1) (No credit will be given for this course unless both MIME 628N1 and MIME 628N2 are successfully completed in a twelve month period) See MIME 628N1 for course description.

MIME 629 MINERAL ENGINEERING PROJECT 2. (3) (Students must also register for MIME 629N2) (No credit will be given for this course unless both MIME 629N1 and MIME 629N2 are successfully completed in a twelve month period) (MIME 629N1 and MIME 629N2 together are equivalent to MIME 629) Continuation of Mining Engineering Project.

MIME 629N1 MINERAL ENGINEERING PROJECT 2. (3) (Students must also register for MIME 629N2) (No credit will be given for this course unless both MIME 629N1 and MIME 629N2 are successfully completed in a twelve month period) (MIME 629N1 and MIME 629N2 together are equivalent to MIME 629) Continuation of Mining Engineering Project.


MIME 632 MINERAL ENGINEERING PROJECT 3. (3) Continuation of Mining Engineering Project 1.

MIME 634 MINERAL ENGINEERING PROJECT 3. (Students must register for both MIME 634D1 and MIME 634D2) (No credit will be given for this course unless both MIME 634D1 and MIME 634D2 are successfully completed in consecutive terms) A project of the student's choice, undertaken under the direct supervision of at least one staff member. The final mark is assessed on the basis of a final report that is examined internally, by the supervisor and at least one other staff member.

MIME 634N1 MINERAL ENGINEERING PROJECT 3. (1.5) (Students must also register for MIME 634N2) (No credit will be given for this course unless both MIME 634N1 and MIME 634N2 are successfully completed in a twelve month period) (MIME 634N1 and MIME 634N2 together are equivalent to MIME 634) Continuation of Mining Engineering Project 1.

MIME 634N2 MINERAL ENGINEERING PROJECT 3. (1.5) (Prerequisite: MIME 634N1) (No credit will be given for this course unless both MIME 634N1 and MIME 634N2 are successfully completed in a twelve month period) (MIME 634N1 and MIME 634N2 together are equivalent to MIME 634) Continuation of Mining Engineering Project 1.

MIME 635 FINITE ELEMENT METHOD - ROCK MECHANICS. (4) (Prerequisites: MIME 521 and/or permission of instructor) Equilibrium equation solvers; elasticity theory; finite element formulative procedures; convergence and accuracy; 2-D and 3-D isoparametric elements; rock failure criteria; applications to rock/mining engineering; computer programming using available software library (FELIBS) and packages.


MIME 640 ADVANCED MINERAL PROCESSING. (6) Modern advances in mineral processing techniques. The student will prepare a series of reports covering developments in mineral processing.
MIME 640D1 (3), MIME 640D2 (3) Advanced Mineral Processing. (Students must register for both MIME 640D1 and MIME 640D2) (No credit will be given for this course unless both MIME 640D1 and MIME 640D2 are successfully completed in consecutive terms) (MIME 640D1 and MIME 640D2 together are equivalent to MIME 640) Modern advances in mineral processing techniques. The student will prepare a series of reports covering developments in mineral processing.

MIME 650N1 Advanced Extractive Metallurgy 1. (3) (Prerequisite: MIME 650N1) (No credit will be given for this course unless both MIME 650N1 and MIME 650N2 are successfully completed in a twelve month period.) Metallurgical applications of heat, mass and momentum transfer theories. Particular emphasis is placed on the applications of computational fluid dynamics and development of appropriate software programs. These are based on the integral control volume, finite difference approach, employing body-fitted co-ordinate schemes to handle arbitrarily shaped flow domains. Turbulence models such as K-E and large eddy simulation are presented.

MIME 650N2 Advanced Extractive Metallurgy 1. (3) (Prerequisite: MIME 650N1) (No credit will be given for this course unless both MIME 650N1 and MIME 650N2 are successfully completed in a twelve month period.) See MIME 650N1 for course description.

MIME 652 Aqueous Processing. (3) Advanced treatment of the chemical and engineering principles governing aqueous dissolution, purification and deposition operations. Topics include: ionic activities of dilute and concentrated solutions; solution and solid-liquid equilibria; analysis of complexation and redox reactions; high temperature solution thermodynamic kinetics; solvent extraction, equilibria and mass transfer kinetics; nucleation, growth and agglomeration phenomena in aqueous precipitation systems.

MIME 653 Transport Phenomena - Process Metallurgy. (3) Process metallurgical applications of heat, mass and momentum transport theories. Methods of numerical solution in the analysis of: continuous casting, ingot solidification, soaking pits, hot mill operations, alloy addition methods in steel-making, etc. Students are assigned individual computer projects and present a report plus a seminar on their findings.

MIME 661 Literature Review on Selected Research Topics. (3) (Prerequisite: Permission of supervisor) (Restriction: Open only to graduate students in thesis programs in Mining or Materials Engineering.) Literature review concerning specific research topics.

MIME 670 Research Seminar 1. (6) (Restriction: For students registered for a Master's degree in Mining and or Materials Engineering.)

MIME 672D1 (3), MIME 672D2 (3) Rock Mechanics Seminar. (Students must register for both MIME 672D1 and MIME 672D2) (No credit will be given for this course unless both MIME 672D1 and MIME 672D2 are successfully completed in consecutive terms) Theoretical and practical aspects of ground control practice using the case study method.

MIME 673 Mining Engineering Seminar. (6) For students registered in the Graduate Diploma or Master's programs in Mining.

MIME 673D1 (3), MIME 673D2 (3) Mining Engineering Seminar. (Students must register for both MIME 673D1 and MIME 673D2) (No credit will be given for this course unless both MIME 673D1 and MIME 673D2 are successfully completed in consecutive terms) (MIME 673D1 and MIME 673D2 together are equivalent to MIME 673) For students registered in the Graduate Diploma or Master's programs in Mining.

MIME 673N2 Mining Engineering Seminar. (3) (Prerequisite: MIME 673N1) (No credit will be given for this course unless both MIME 673N1 and MIME 673N2 are successfully completed in a twelve month period) (MIME 673N1 and MIME 673N2 together are equivalent to MIME 673) See MIME 673N1 for course description.

MIME 690 Thesis Research 1. (6) (Restriction: For Master's students only.)

MIME 691 Thesis Research 2. (3) (Restriction: For Master's students only.)

MIME 692 Thesis Research 3. (6) (Restriction: For Master's students only.)

MIME 693 Thesis Research 4. (3) (Restriction: For Master's students only.)

MIME 694 Thesis Research 5. (6) (Restriction: For Master's students only.)

MIME 695 Thesis Research 6. (3) (Restriction: For Master's students only.)

MIME 701 Ph.D. Thesis Research Proposal. (0) (Restriction: For students registered in a Ph.D. program in Mining or Materials Engineering.) Student submits a document and takes an oral examination to demonstrate familiarity with relevant literature, define a methodology and describe a work plan.

MIME 771 Research Seminar 2. (6) (Restriction: For students registered in a Ph.D. program in Materials Engineering.)

MIME 776 Research Seminar 3. (6) For students registered in a Ph.D. program in Mining.
The Master of Arts degree (M.A.) is available as a thesis option in Music Education, Musicology, and Theory and as a non-thesis option in Music Education, Musicology, and Theory.

The Master of Music degree (M.M.) is available in Composition, Performance, and Sound Recording. Specializations offered within the Performance option are: piano, guitar, orchestral instruments, organ, conducting, chamber music, orchestral training, piano accompaniment, voice, opera, opera coaching, vocal pedagogy, early music, church music - organ, and jazz.

The Doctor of Music degree (D.Mus.) is offered in Composition and Performance Studies while the Doctor of Philosophy degree (Ph.D.) is available in Composition, Music Education, Musicology, Music Technology, Sound Recording and Theory. Interdisciplinary studies are encouraged.

There are opportunities for graduate students to obtain funding by being hired as assistants through the Schulich School of Music, technicians, correctors, library assistants, stage hands and front hall staff in Concerts and Publicity and invigilators. A variety of research assistantships in selected areas are also available.

Faculty Lecturer
Lisa Lorenzino; B.Mus. (Tor.), B.Ed. (Sask.), M.A. (McG.)

54.2 Programs Offered
Inquiries should be directed to the Chair of the Department of Music Research or the Chair of the Department of Performance, as appropriate.

### 54.3 Admission Requirements

#### Master's Degrees

Applicants for the master's degree must hold a B.Mus. or a B.A. degree with a Major or Honours in Music including considerable work done in the area of specialization.

Applicants found to be deficient in their background preparation may be required to take certain additional undergraduate courses.

All applicants (except those for performance, musicology and sound recording) will be required to take placement examinations.

Applicants to the Composition, Music Education, Music Technology, Musicology, Sound Recording, and Theory programs are requested to submit samples of work done in their special area.

Applicants to the Music Education program should normally have had two years of teaching experience.

All applicants to the Performance program will be required to pass an entrance audition. Only those applicants who clearly demonstrate the potential to become professional performers on their instruments will be admitted.

Applicants to the Vocal Pedagogy option should have a minimum of three to four years experience in studio teaching.

A reading knowledge of German is strongly recommended as a prerequisite for graduate work in Choral Conducting, Musicology, and Theory.

**Prerequisite Undergraduate Courses for M.Mus. – Sound Recording**

In order to be considered for admission to the Master of Music in Sound Recording, students must have a B.Mus. degree and must attain a minimum grade of "B" in all of the courses listed below.

**Schulich School of Music**

- MUCO 260 Instruments of the Orchestra
- MUMT 202 Fundamentals of New Media
- MUMT 203 Introduction to Digital Audio
- MUSR 232 Introduction to Electronics
- MUSR 300D1/MUSR 300D2 Introduction to Music Recording
- MUSR 339 Introduction to Electroacoustics

**One of (Complementary):**

- MUMT 302 New Music Production 1
- MUMT 306 Music and Audio Computing 1

**Faculty of Science**

- PHYS 224 Physics and Psychophysics of Music
- PHYS 225 Musical Acoustics

**Prerequisite Undergraduate Courses for M.Mus. – Performance**

Applicants to the performance program are expected to have a background in Music Theory equivalent to the B.Mus. in Performance. Applicants found to be deficient in their background preparation may be required to take certain additional music theory undergraduate courses.

**Piano Accompaniment**

An undergraduate major in Piano.

- MUHL 570 Research Methods in Music
- One of:
  - MUHL 372 Solo Song outside Germany and Austria
  - MUHL 390 The German Lied

**Orchestral Conducting**

- MUCO 260 Instruments of the Orchestra
- MUCO 261 Elementary Orchestration
- MUCO 460D1/MUCO 460D2 Advanced Orchestration

- MUHL 389 Orchestral Literature
- MUHL 570 Research Methods in Music
- MUIT 201 String Techniques
- MUIT 202 Woodwind Techniques
- MUIT 203 Brass Techniques
- MUIT 204 Percussion Techniques
- MUPG 315D1/MUPG 315D2 Introduction to Orchestral Conducting (or equivalent)

**Choral Conducting**

- GERM 202 German Language, Beginners
- MUCO 260 Instruments of the Orchestra
- MUCO 261 Elementary Orchestration
- MUJZ 440D1/MUJZ 440D2 Advanced Jazz Composition
- MUJZ 461D1/MUJZ 461D2 Advanced Jazz Arranging
- MUJZ 493 Jazz Performance Practice

**Early Music**

- MUHL 570 Research Methods in Music
- MUPP 381 Topics: Performance Practice before 1800
- Plus 6 credits from the following with at least one course from each group:
  
  **Group 1:**
  - MUHL 380 Medieval Music
  - MUHL 381 Renaissance Music
  - MUHL 382 Baroque Music
  - MUHL 383 Classical Music
  
  **Group 2:**
  - MUHL 395 Keyboard Literature before 1750
  - MUHL 591D1/MUHL 591D2 Paleography
  - MUJZ 306 English Diction (or equivalent)
  
  **Voice**
  - Two of:
    - MUHL 201 Italian Diction (or equivalent)
    - MUHL 211 French Diction (or equivalent)
    - MUHL 212 English Diction (or equivalent)
    - MUHL 213 German Diction (or equivalent)

**Orchestral Training**

- MUHL 389 Orchestral Literature
- MUHL 570 Research Methods in Music

**Piano (Solo and Chamber Music)**

- MUHL 570 Research Methods in Music
- One of:
  - MUHL 366 The Era of the Fortepiano
  - MUHL 396 Era of the Modern Piano

**Voice (Vocal Opera Coach, Opera Performance, Vocal Pedagogy and Vocal Performance)**

- MUHL 570 Research Methods in Music
- MUIT 201 String Techniques
- MUIT 202 Woodwind Techniques
- MUIT 203 Brass Techniques
- MUIT 204 Percussion Techniques
- MUPG 315D1/MUPG 315D2 Introduction to Orchestral Conducting (or equivalent)
Two of:
MUHL 372 Solo Song outside Germany and Austria
MUHL 377 Baroque Opera
MUHL 387 Opera from Mozart to Puccini
MUHL 388 Twentieth-Century Opera
MUHL 390 The German Lied

D.Mus. Degree
Applicants for the D.Mus. degree in Composition must hold an M.Mus. degree in Composition, or its equivalent, and must submit scores and/or recordings of their compositions at the time of application.

Applicants for the D.Mus. degree in Performance Studies must hold an M.Mus. degree in Performance, or its equivalent; are required to submit a screening DVD, samples of written work and a statement of research interests by the dates for guaranteed consideration. Only the most advanced applicants will be invited to pass a live entrance audition and interview.

Ph.D. Degree
Applicants for the Ph.D. degree in Composition must hold an M.Mus. in Composition or equivalent and must submit scores and/or recordings of their compositions at the time of application, and a written description (no more than two pages) of the research path(s) they wish to follow.

Applicants for the Ph.D. degree in Music Education, Music Technology, Musicology, Sound Recording or Theory must hold a master's or a bachelor's degree equivalent to a McGill Honours degree, in Music Technology, Music Education, Musicology, or Theory. Applicants with a bachelor's degree will normally be admitted to the M.A. program for the first year and may apply for admittance to the Ph.D. program after the completion of one full year of graduate course work. Qualified applicants who have already completed an appropriate master's degree will be admitted to the second year of the program.

54.4 Application Procedures
McGill's online application form for graduate program candidates is available at www.mcgill.ca/gradapplicants/apply. The web application process will automatically charge a $100 application fee and, for Performance degrees, a $60 audition fee.

Dates for Guaranteed Consideration
For dates for guaranteed consideration, please consult the following website: www.mcgill.ca/gradapplicants/programs. Then select the appropriate program.

Application will be considered upon receipt of:
1. online web application;
2. two official copies of transcripts, sent directly by the registrars of all universities attended (if documents are written in a language other than English or French, please submit an official certified translation in addition to the original documents);
3. two signed original letters of reference, on official letterhead;
4. submissions appropriate to area of specialization (www.mcgill.ca/music/prospective/graduate/procedures);
5. all M.Mus. applicants in conducting, female voices and piano will be required to submit recordings for pre-selection. All D.Mus. performance applicants will be required to submit a DVD for pre-selection. Following a review of these recordings/DVDs, selected applicants will be invited to attend a live audition.
(www.mcgill.ca/music/prospective/graduate/requirements)
6. TOEFL test results, where applicable.
(www.mcgill.ca/music/prospective/graduate/information)
All supporting documentation is to be submitted to Patrick O'Neill, Admissions Officer, Schulich School of Music.

54.5 Program Requirements

MASTERS' DEGREES
The minimum residence requirement for masters' programs is 3 full-time terms; for Sound Recording, 4 full-time terms. In all programs a minimum number of graduate courses are prescribed. The student's major work is expected to be thesis, research, composition or performance which will be done under the supervision of an adviser. This work, as well as any additional courses and/or individual study which the Department considers necessary, constitutes the central part of each program.

Applicants who hold the equivalent of a McGill B.Mus. with Honours in the area of specialization may be able to complete the master's degree in less than two years.

Master of Music – Composition (Thesis) (45 credits)
Required Courses (33 credits)
MUCO 622D1 (3) Composition Tutorial
MUCO 622D2 (3) Composition Tutorial
MUGS 684 (6) Master's Thesis Research 2
MUGS 685 (9) Master's Thesis Research 3
MUGS 686 (12) Master's Thesis Research 4

The thesis is a composition, accompanied by an analytical essay of approximately 20 to 30 pages.

Complementary Courses (6 credits)
6 credits form the following:
MUCO 631 (3) Seminar in Composition 1
MUCO 632 (3) Seminar in Composition 2
MUCO 633 (3) Seminar in Composition 3
MUCO 634 (3) Seminar in Composition 4
MUCO 635 (3) Seminar in Composition 5
MUCO 636 (3) Seminar in Composition 6

Electives Courses (6 credits)
6 credits, at the 500 level or higher, approved by the Department.

M.A. in Music – Music Education (Thesis) (45 credits)
Required Courses (30 credits)
MUGS 683 (3) Master's Thesis Research 1
MUGS 684 (6) Master's Thesis Research 2
MUGS 685 (9) Master's Thesis Research 3
MUGS 686 (12) Master's Thesis Research 4

The candidate will undertake supervised research leading to a thesis that will be an in-depth investigation in some specialized field of music education.

Complementary Courses (15 credits)
15 credits at the 500 level or higher, approved by the Department. Normally 9 credits will be Seminars in Music Education from the following:
MUGT 610 (3) Seminar - Music Education 1
MUGT 611 (3) Seminar - Music Education 2
MUGT 612 (3) Seminar - Music Education 3
MUGT 613 (3) Seminar - Music Education 4

M.A. in Music – Music Technology (Thesis) (45 credits)
Required Courses (30 credits)
MUGS 683 (3) Master's Thesis Research 1
MUGS 684 (6) Master's Thesis Research 2
MUGS 685 (9) Master's Thesis Research 3
MUGS 686 (12) Master's Thesis Research 4

The candidate will undertake supervised research leading to a thesis that will utilize or investigate an aspect of musical science and technology.
Complementary Courses (15 credits)
15 credits at the 500 level or higher approved by the Department, 9 credits of which will be Music Technology seminars with the prefix MUMT.

M.A. in Music – Musicology (Thesis) (45 credits)

Required Courses (33 credits)
MUGS 529 (3) Proseminar in Musicology
MUGS 583 (3) Master’s Thesis Research 1
MUGS 684 (6) Master’s Thesis Research 2
MUGS 685 (9) Master’s Thesis Research 3
MUGS 686 (12) Master’s Thesis Research 4

The candidate will undertake supervised research leading to a thesis that will be an in-depth investigation in some specialized field of musicology.

Complementary Courses (12 credits)
12 credits at the 500 level or higher, approved by the Department. Normally 6 credits will be Seminars in Musicology from the following:
- MUHL 680 (3) Seminar in Musicology 1
- MUHL 681 (3) Seminar in Musicology 2
- MUHL 682 (3) Seminar in Musicology 3
- MUHL 683 (3) Seminar in Musicology 4
- MUHL 684 (3) Seminar in Musicology 5
- MUHL 685 (3) Seminar in Musicology 6
- MUHL 692 (3) Seminar in Music Literature 1
- MUHL 693 (3) Seminar in Music Literature 2
- MUHL 694 (3) Seminar in Music Literature 3
- MUHL 695 (3) Seminar in Music Literature 4
- MUHL 696 (3) Seminar in Music Literature 5
- MUHL 697 (3) Seminar in Music Literature 6

M.A. in Music – Musicology – Gender and Women’s Studies (Thesis) (45 credits)

Required Courses (33 credits)
MUGS 529 (3) Proseminar in Musicology
MUGS 583 (3) Master’s Thesis Research 1
MUGS 684 (6) Master’s Thesis Research 2
MUGS 685 (9) Master’s Thesis Research 3
WMST 601 (3) Feminist Theories and Methods

The candidate will undertake supervised research leading to a thesis that will be an in-depth investigation in some specialized field of musicology on a topic centrally related to issues of gender and/or women’s studies.

Complementary Courses (12 credits)
9 credits at the 500 level or higher, approved by the Department. Normally 6 credits will be Seminars in Musicology from the following:
- MUHL 680 (3) Seminar in Musicology 1
- MUHL 681 (3) Seminar in Musicology 2
- MUHL 682 (3) Seminar in Musicology 3
- MUHL 683 (3) Seminar in Musicology 4
- MUHL 684 (3) Seminar in Musicology 5
- MUHL 685 (3) Seminar in Musicology 6
- MUHL 692 (3) Seminar in Music Literature 1
- MUHL 693 (3) Seminar in Music Literature 2
- MUHL 694 (3) Seminar in Music Literature 3
- MUHL 695 (3) Seminar in Music Literature 4
- MUHL 696 (3) Seminar in Music Literature 5
- MUHL 697 (3) Seminar in Music Literature 6

3 credits of:
- WMST 602 (3) Feminist Research Symposium
OR
- 3 credits at the 500 level or higher, on gender/women’s issues, may be selected from in or outside of the Department. The selection must be approved by the Department.

Master of Music – Sound Recording (Non-Thesis) (60 credits)

Required Courses (51 credits)
MUSR 629D1 (2) Technical Ear Training
MUSR 629D2 (2) Technical Ear Training
MUSR 667 (3) Digital Studio Technology
MUSR 668 (3) Digital/Analog Audio Editing
MUSR 669D1 (1.5) Topics: Classical Music Recording
MUSR 669D2 (1.5) Topics: Classical Music Recording
MUSR 670D1 (5) Recording Theory and Practice 1
MUSR 670D2 (5) Recording Theory and Practice 1
MUSR 671D1 (5) Recording Theory and Practice 2
MUSR 671D2 (5) Recording Theory and Practice 2
MUSR 672D1 (3) Analysis of Recordings
MUSR 672D2 (3) Analysis of Recordings
MUSR 674 (3) Electronic and Electroacoustic Measurement
MUSR 677D1 (3) Audio for Video Post-Production
MUSR 677D2 (3) Audio for Video Post-Production
MUSR 678 (3) Advanced Digital Editing and Post-Production

Elective Courses (9 credits)
Three approved 3-credit graduate course electives, approved by the Department.

M.A. in Music – Theory (Thesis) (45 credits)

Required Courses (30 credits)
MUGS 683 (3) Master’s Thesis Research 1
MUGS 684 (6) Master’s Thesis Research 2
MUGS 685 (9) Master’s Thesis Research 3
MUGS 686 (12) Master’s Thesis Research 4

The candidate will undertake supervised research leading to a thesis that will be an in-depth investigation in some specialized field of music theory.

Complementary Courses (15 credits)
12 credits at the 500 level or higher, approved by the Department. Normally 9 credits will be Seminars in Music Theory from the following:
- MUTH 652 (3) Seminar in Music Theory 1
- MUTH 653 (3) Seminar in Music Theory 2
- MUTH 654 (3) Seminar in Music Theory 3
- MUTH 655 (3) Seminar in Music Theory 4
- MUTH 656 (3) Seminar in Music Theory 5
- MUTH 657 (3) Seminar in Music Theory 6

3 credits from:
- MUTH 658 (3) History of Music Theory 1
- MUTH 659 (3) History of Music Theory 2

M.A. in Music – Theory – Gender and Women’s Studies (Thesis) (45 credits)

Required Courses (30 credits)
MUGS 683 (3) Master’s Thesis Research 1
MUGS 684 (6) Master’s Thesis Research 2
MUGS 685 (9) Master’s Thesis Research 3
MUGS 686 (12) Master’s Thesis Research 4
WMST 601 (3) Feminist Theories and Methods

The candidate will undertake supervised research leading to a thesis that will be an in-depth investigation in some specialized field of music theory on a topic centrally related to issues of gender and/or women’s studies.

Complementary Courses (15 credits)
9 credits at the 500 level or higher, approved by the Department, from the following:
- MUTH 652 (3) Seminar in Music Theory 1
- MUTH 653 (3) Seminar in Music Theory 2
- MUTH 654 (3) Seminar in Music Theory 3
- MUTH 655 (3) Seminar in Music Theory 4
- MUTH 656 (3) Seminar in Music Theory 5
- MUTH 657 (3) Seminar in Music Theory 6

3 credits at the 500 level or higher, on gender/women’s issues, may be selected from in or outside of the Department. The selection must be approved by the Department.
M.A. in Music (Non-Thesis) options in Music Education, Musicology, and Theory (45 credits)

Required Courses (21 credits)
Seven 3-credit graduate courses approved by the appropriate Area, four of which must be in the Area itself.

For students in the Musicology Area, one of the courses must be:
- MUTH 658 (3) History of Music Theory 1
- MUTH 659 (3) History of Music Theory 2

For students in the Theory Area, one of the courses must be:
- MUTH 658 (3) History of Music Theory 1
- MUTH 659 (3) History of Music Theory 2

For students in Music Education, with the approval of the Department, two of the seven 3-credit courses may be taken in the Faculty of Education.

Reading and Research Courses (24 credits)
- MUGS 614 (3) Reading Course 1
- MUGS 615 (3) Reading Course 2
- MUGS 635 (9) Research Paper 1
- MUGS 636 (9) Research Paper 2

Master of Music – Performance: Solo – Guitar, Orchestral Instruments, Organ, Conducting (45 credits)

Required Courses (15 credits)
- MUPG 620 (4) Performance Tutorial 1
- MUPG 621 (4) Performance Tutorial 2
- MUPG 622 (4) Performance Tutorial 3

One of the following:
- MUPP 690 (3) Performance Practice Seminar 1
- MUPP 691 (3) Performance Practice Seminar 2
- MUPP 692 (3) Performance Practice Seminar 3
- MUPP 693 (3) Performance Practice Seminar 4
- MUPP 694 (3) Performance Practice Seminar 5
- MUPP 695 (3) Performance Practice Seminar 6

Complementary Courses (6 credits)
One approved graduate 3-credit seminar with the prefix MUEN, MUGS, MUGT, MUHL, MUMT, MUPP, MUTH

One additional graduate 3-credit seminar approved by the Department

Recitals (24 credits)
- MUPG 660 (12) Solo Recital Project 1
- MUPG 667 (12) Solo Recital 2

Note: One of these could optionally include some chamber music.

Master of Music – Performance: Chamber Music – Piano (49 credits)

Required Courses (22 credits)
- MUPG 620 (4) Performance Tutorial 1
- MUPG 621 (4) Performance Tutorial 2
- MUPG 622 (4) Performance Tutorial 3
- MUPG 681 (2) Piano Seminar 1
- MUPG 682 (2) Piano Seminar 2

3 credits of the following:
- MUEN 560 (1) Chamber Music Ensemble
- MUEN 578 (1) Song Interpretation 1
- MUEN 579 (1) Song Interpretation 2
- MUEN 584 (1) Studio Accompanying
- MUEN 594 (2) Contemporary Music Ensemble
- MUEN 597 (2) Orchestral Ensembles
- MUEN 684 (2) Studio Accompanying

One of the following:
- MUPP 690 (3) Performance Practice Seminar 1
- MUPP 691 (3) Performance Practice Seminar 2
- MUPP 692 (3) Performance Practice Seminar 3
- MUPP 693 (3) Performance Practice Seminar 4
- MUPP 694 (3) Performance Practice Seminar 5
- MUPP 695 (3) Performance Practice Seminar 6

Complementary Courses (3 credits)
One approved graduate 3-credit seminar with the prefix MUEN, MUGS, MUGT, MUHL, MUMT, MUPP, MUTH

Recitals (24 credits)
- MUPG 660 (12) Solo Recital Project 1
- MUPG 667 (12) Solo Recital 2

Note: One of these could optionally include some chamber music.

Master of Music – Performance: Chamber Music – Piano (49 credits)

Required Courses (22 credits)
- MUPG 620 (4) Performance Tutorial 1
- MUPG 621 (4) Performance Tutorial 2
- MUPG 622 (4) Performance Tutorial 3
- MUPG 681 (2) Piano Seminar 1
- MUPG 682 (2) Piano Seminar 2

3 credits from the following:
- MUEN 560 (1) Chamber Music Ensemble
- MUEN 578 (1) Song Interpretation 1
- MUEN 579 (1) Song Interpretation 2
- MUEN 584 (1) Studio Accompanying
- MUEN 594 (2) Contemporary Music Ensemble
- MUEN 597 (2) Orchestral Ensembles
- MUEN 684 (2) Studio Accompanying
One of the following:
MUPP 690 (3) Performance Practice Seminar 1
MUPP 691 (3) Performance Practice Seminar 2
MUPP 692 (3) Performance Practice Seminar 3
MUPP 693 (3) Performance Practice Seminar 4
MUPP 694 (3) Performance Practice Seminar 5
MUPP 695 (3) Performance Practice Seminar 6

Complementary Courses (3 credits)
One approved graduate 3-credit seminar with the prefix MUCO, MUGS, MUGT, MUHL, MUMT, MUPP, MUTH

Recitals (24 credits)
MUPG 861 (12) Chamber Recital Project 1
MUPG 668 (12) Chamber Music Recital 2
Note: One of these could optionally include some solo music.

Master of Music – Performance: Piano Accompaniment
(45 credits)

Required Courses (21 credits)
MUPG 620 (4) Performance Tutorial 1
MUPG 621 (4) Performance Tutorial 2
MUPG 622 (4) Performance Tutorial 3
2 credits of:
MUEN 578 (1) Song Interpretation 1
or
MUEN 579 (1) Song Interpretation 2
4 credits of:
MUEN 684 (2) Studio Accompanying
(Two terms of MUEN 684)
OR
6 credits of:
MUEN 596 (2) Opera Repetiteur
(Three terms of MUEN 596)

One of the following:
MUPG 590 (3) Vocal Styles and Conventions
MUPP 690 (3) Performance Practice Seminar 1
MUPP 691 (3) Performance Practice Seminar 2
MUPP 692 (3) Performance Practice Seminar 3
MUPP 693 (3) Performance Practice Seminar 4
MUPP 694 (3) Performance Practice Seminar 5
MUPP 695 (3) Performance Practice Seminar 6

Complementary Courses (6 credits)
One approved graduate 3-credit seminar with the prefix MUCO, MUGS, MUGT, MUHL, MUMT, MUPP, MUTH

Recitals (18 credits)
MUPG 656 (6) Quick Study Examination
MUPG 657 (6) Opera Performance Project
MUPG 658 (6) Opera Performance

One of the following:
MUPG 590 (3) Vocal Styles and Conventions
MUPP 690 (3) Performance Practice Seminar 1
MUPP 691 (3) Performance Practice Seminar 2
MUPP 692 (3) Performance Practice Seminar 3
MUPP 693 (3) Performance Practice Seminar 4
MUPP 694 (3) Performance Practice Seminar 5
MUPP 695 (3) Performance Practice Seminar 6

Complementary Courses (6 credits)
One approved graduate 3-credit seminar with the prefix MUCO, MUGS, MUGT, MUHL, MUMT, MUPP, MUTH

One additional graduate 3-credit seminar approved by the Department

Recitals (18 credits)
MUPG 660 (12) Solo Recital Project 1
MUPG 664 (6) Repertoire Examination

Master of Music – Performance: Opera Performance
(45 credits)

Required Courses (21 credits)
MUPG 620 (4) Performance Tutorial 1
MUPG 621 (4) Performance Tutorial 2
MUPG 622 (4) Performance Tutorial 3
MUIN 600 (2) Vocal Repertoire Coaching 1
MUIN 601 (2) Vocal Repertoire Coaching 2
MUIN 602 (2) Vocal Repertoire Coaching 3
MUPG 620 (4) Performance Tutorial 1
MUPG 621 (4) Performance Tutorial 2
MUPG 622 (4) Performance Tutorial 3
One of the following:
MUPG 590 (3) Vocal Styles and Conventions
MUPP 690 (3) Performance Practice Seminar 1
MUPP 691 (3) Performance Practice Seminar 2
MUPP 692 (3) Performance Practice Seminar 3
MUPP 693 (3) Performance Practice Seminar 4
MUPP 694 (3) Performance Practice Seminar 5
MUPP 695 (3) Performance Practice Seminar 6

Complementary Courses (6 credits)
One approved graduate 3-credit seminar with the prefix MUCO, MUGS, MUGT, MUHL, MUMT, MUPP, MUTH

One additional graduate 3-credit seminar from the following:
MUPG 590 (3) Vocal Styles and Conventions
(If not already taken as a required course)
MUIN 600 (2) Vocal Repertoire Coaching 1
MUIN 601 (2) Vocal Repertoire Coaching 2
MUIN 602 (2) Vocal Repertoire Coaching 3
MUIN 606 (2) Vocal Repertoire Coaching 4
MUPG 620 (4) Performance Tutorial 1
MUPG 621 (4) Performance Tutorial 2
MUPG 622 (4) Performance Tutorial 3
MUIN 600 (2) Vocal Repertoire Coaching 1
MUIN 601 (2) Vocal Repertoire Coaching 2
MUIN 602 (2) Vocal Repertoire Coaching 3
MUIN 606 (2) Vocal Repertoire Coaching 4
MUIN 607 (2) Vocal Repertoire Coaching 5
MUPG 620 (4) Performance Tutorial 1
MUPG 621 (4) Performance Tutorial 2
MUPG 622 (4) Performance Tutorial 3
One of the following:
MUPG 590 (3) Vocal Styles and Conventions
MUPP 690 (3) Performance Practice Seminar 1
MUPP 691 (3) Performance Practice Seminar 2
MUPP 692 (3) Performance Practice Seminar 3
MUPP 693 (3) Performance Practice Seminar 4
MUPP 694 (3) Performance Practice Seminar 5
MUPP 695 (3) Performance Practice Seminar 6

Recitals (18 credits)
MUPG 656 (6) Quick Study
MUPG 657 (6) Opera Performance Project
MUPG 658 (6) Opera Performance

One of the following:
MUPG 590 (3) Vocal Styles and Conventions
MUPP 690 (3) Performance Practice Seminar 1
MUPP 691 (3) Performance Practice Seminar 2
MUPP 692 (3) Performance Practice Seminar 3
MUPP 693 (3) Performance Practice Seminar 4
MUPP 694 (3) Performance Practice Seminar 5
MUPP 695 (3) Performance Practice Seminar 6

Recitals (18 credits)
MUPG 660 (12) Solo Recital Project 1
MUPG 664 (6) Repertoire Examination

Master of Music – Performance: Vocal Opera Coach
(45 credits)

Required Courses (21 credits)
MUPG 620 (4) Performance Tutorial 1
MUPG 621 (4) Performance Tutorial 2
MUPG 622 (4) Performance Tutorial 3
MUPG 646 (1) Score- and Sight-Reading 1
MUPG 647 (1) Score- and Sight-Reading 2
MUPG 670 (2) Advanced Continuo 1
MUPG 671 (2) Advanced Continuo 2
One of the following:
MUPG 590 (3) Vocal Styles and Conventions
MUPP 690 (3) Performance Practice Seminar 1
MUPP 691 (3) Performance Practice Seminar 2
MUPP 692 (3) Performance Practice Seminar 3
MUPP 693 (3) Performance Practice Seminar 4
MUPP 694 (3) Performance Practice Seminar 5
MUPP 695 (3) Performance Practice Seminar 6

Complementary Courses (6 credits)
One approved graduate 3-credit seminar with the prefix MUCO, MUGS, MUGT, MUHL, MUMT, MUPP, MUTH

One additional graduate 3-credit seminar approved by the Department

Recitals (18 credits)
MUPG 656 (6) Quick Study
MUPG 657 (6) Opera Performance Project
MUPG 658 (6) Opera Performance

One of the following:
MUPG 590 (3) Vocal Styles and Conventions
MUPP 690 (3) Performance Practice Seminar 1
MUPP 691 (3) Performance Practice Seminar 2
MUPP 692 (3) Performance Practice Seminar 3
MUPP 693 (3) Performance Practice Seminar 4
MUPP 694 (3) Performance Practice Seminar 5
MUPP 695 (3) Performance Practice Seminar 6

Recitals (18 credits)
MUPG 660 (12) Solo Recital Project 1
MUPG 664 (6) Repertoire Examination

Master of Music – Performance: Vocal Opera Coach
(45 credits)

Required Courses (21 credits)
MUPG 620 (4) Performance Tutorial 1
MUPG 621 (4) Performance Tutorial 2
MUPG 622 (4) Performance Tutorial 3
MUPG 646 (1) Score- and Sight-Reading 1
MUPG 647 (1) Score- and Sight-Reading 2
MUPG 670 (2) Advanced Continuo 1
MUPG 671 (2) Advanced Continuo 2
One of the following:
MUPG 590 (3) Vocal Styles and Conventions
MUPP 690 (3) Performance Practice Seminar 1
MUPP 691 (3) Performance Practice Seminar 2
MUPP 692 (3) Performance Practice Seminar 3
MUPP 693 (3) Performance Practice Seminar 4
MUPP 694 (3) Performance Practice Seminar 5
MUPP 695 (3) Performance Practice Seminar 6

Recitals (18 credits)
MUPG 656 (6) Quick Study
MUPG 657 (6) Opera Performance Project
MUPG 658 (6) Opera Performance

One of the following:
MUPG 590 (3) Vocal Styles and Conventions
MUPP 690 (3) Performance Practice Seminar 1
MUPP 691 (3) Performance Practice Seminar 2
MUPP 692 (3) Performance Practice Seminar 3
MUPP 693 (3) Performance Practice Seminar 4
MUPP 694 (3) Performance Practice Seminar 5
MUPP 695 (3) Performance Practice Seminar 6

Recitals (18 credits)
MUPG 660 (12) Solo Recital Project 1
MUPG 664 (6) Repertoire Examination
Complementary Courses (6 credits)
One approved graduate 3-credit seminar with the prefix MUCO, MUGS, MUGT, MUHL, MUMT, MUPP, MUTH

One additional graduate 3-credit seminar from the following:
MUPG 590 (3) Vocal Styles and Conventions (if not already taken as a required course)
MUPG 691 (3) Vocal Seminar 1
MUPG 692 (3) Vocal Seminar 2
MUPG 693 (3) Vocal Treatises and Methods
MUPG 694 (3) Vocal Physiology for Singers

Recitals (18 credits)
MUPG 653 (6) Opera Coach Project
MUPG 654 (6) Opera Coach Performance
MUPG 655 (6) Opera Coach Quick Study

Master of Music – Performance: Vocal Performance (49 credits)

Required Courses (19 credits)
MUIN 600 (2) Vocal Repertoire Coaching 1
MUIN 601 (2) Vocal Repertoire Coaching 2
MUPG 620 (4) Performance Tutorial 1
MUPG 621 (4) Performance Tutorial 2
MUPG 622 (4) Performance Tutorial 3

One of the following:
MUPG 590 (3) Vocal Styles and Conventions
MUPP 690 (3) Performance Practice Seminar 1
MUPP 691 (3) Performance Practice Seminar 2
MUPP 692 (3) Performance Practice Seminar 3
MUPP 693 (3) Performance Practice Seminar 4
MUPP 694 (3) Performance Practice Seminar 5
MUPP 695 (3) Performance Practice Seminar 6

Complementary Courses (6 credits)
One approved graduate 3-credit seminar with the prefix MUCO, MUGS, MUGT, MUHL, MUMT, MUPP, MUTH

One additional graduate 3-credit seminar from the following:
MUPG 590 (3) Vocal Styles and Conventions (if not already taken as a required course)
MUPG 691 (3) Vocal Seminar 1
MUPG 692 (3) Vocal Seminar 2
MUPG 693 (3) Vocal Treatises and Methods
MUPG 694 (3) Vocal Physiology for Singers

Recitals (24 credits)
MUPG 660* (12) Solo Recital Project 1
MUPG 662 (12) Solo & Chamber Music Recital

One of the following:
MUPG 690 (3) Performance Practice Seminar 1
MUPP 690 (3) Performance Practice Seminar 2
MUPP 690 (3) Performance Practice Seminar 3
MUPP 690 (3) Performance Practice Seminar 4
MUPP 695 (3) Performance Practice Seminar 5
MUPP 695 (3) Performance Practice Seminar 6

Recitals (24 credits)
MUPG 660 (12) Solo Recital Project 1
MUPG 662 (12) Solo & Chamber Music Recital

Master of Music – Performance: Church Music – Organ (45 credits)

Required Courses (21 credits)
MUPG 620 (4) Performance Tutorial 1
MUPG 621 (4) Performance Tutorial 2
MUPG 622 (4) Performance Tutorial 3

6 credits of:
MUEN 593 (2) Choral Ensembles (Three terms of MUEN 593)

One of the following:
MUPG 690 (3) Performance Practice Seminar 1
MUPP 690 (3) Performance Practice Seminar 2
MUPP 690 (3) Performance Practice Seminar 3
MUPP 690 (3) Performance Practice Seminar 4
MUPP 694 (3) Performance Practice Seminar 5
MUPP 695 (3) Performance Practice Seminar 6

Complementary Courses (6 credits)
One approved graduate 3-credit seminar with the prefix MUCO, MUGS, MUGT, MUHL, MUMT, MUPP, MUTH

One additional graduate 3-credit seminar approved by the Department

Recitals (18 credits)
MUPG 660 (12) Solo Recital Project 1
MUPG 676D1/D2 (6) Special Project in Performance 2
Master of Music – Performance: Jazz Performance
(49 credits)
(Saxophone, Trumpet, Trombone, Drums, Piano, Guitar, Bass, Voice)

Required Courses (19 credits)
MUEN 592 (2) Chamber Jazz Ensemble
MUEN 595 (2) Jazz Ensembles
MUJZ 601 (3) Jazz Pedagogy
MUPG 626 (4) Jazz Performance/Composition Tutorial 1
MUPG 627 (4) Jazz Performance/Composition Tutorial 2
MUPG 628 (4) Jazz Performance/Composition Tutorial 3

Elective Courses (5 - 8 credits)
MUPG 652 (9) Jazz Ensemble Recital Project
MUJZ 645 (2) Jazz Repertoire Project 1
MUJZ 644 (2) Jazz Repertoire Project 2
MUPG 660 (12) Solo Recital Project 1

Complementary Courses (22 - 25 credits)
22 - 25 credits from one of the following options, A, B, or C:

Option A – Jazz Performance (25 credits):
MUJZ 640 (2) Jazz Composition & Arranging 1
MUJZ 641 (2) Jazz Composition & Arranging 2
MUPG 659 (9) Performance in Recording Media
MUPG 660 (12) Solo Recital Project 1

Option B – Jazz Composition and Arranging (22 credits):
MUJZ 640 (2) Jazz Composition & Arranging 1
MUJZ 641 (2) Jazz Composition & Arranging 2
MUPG 652 (9) Jazz Ensemble Recital Project
MUPG 659 (9) Performance in Recording Media

Option C – Jazz Orchestral (25 credits):
MUJZ 644 (2) Jazz Repertoire Project 1
MUJZ 645 (2) Jazz Repertoire Project 2
MUPG 652 (9) Jazz Ensemble Recital Project
MUPG 660 (12) Solo Recital Project 1

Elective Courses (5 - 8 credits)
One graduate 2-credit ensemble at the 500 level with the prefix MUEN.
3 - 6 credits from one of the following options, A, B, or C:

Option A – Jazz Performance (3 credits):
One 3-credit graduate seminar at the 600 level approved by the Department.

Option B – Jazz Composition and Arranging (6 credits):
Two 3-credit graduate seminars at the 600 level approved by the Department.

Option C – Jazz Orchestral (3 credits):
One 3-credit graduate seminar at the 600 level approved by the Department.

Courses approved as electives for M.Mus. students in Performance:
All courses at the 600 level with the prefix MUCO, MUGS, MUGT, MUHL, MUMT, MUPP and MUTH and MUHL 591D1/D2 Paleography have been approved as electives for M.Mus. students in Performance.

Doctor of Music (D.Mus.) Degree Requirements – Composition
A minimum of two years’ residence is required beyond the M.Mus. in Composition, or its equivalent.
Details concerning the comprehensive examinations, composition performance, thesis and academic regulations are available from the Student Affairs Coordinator, Schulich School of Music or from the Music Graduate Handbook (www.mcgill.ca/music/student/graduate/grad-handbook).

Required Courses (24 credits)
Comprehensive Examination:
MUGS 701 (0) Comprehensive Examination Part 1
MUGS 702 (0) Comprehensive Examination Part 2

Elective Courses (12 credits)
MUJZ 722D1/D2 (2) Doctoral Composition Tutorial

Ph.D. Degree Requirements
The Ph.D. requires a minimum of three years of full-time resident study (6 full-time terms) beyond a bachelor's degree. A candidate who holds a master’s degree in the area of specialization may, on the recommendation of the Department, be permitted to count the work done for the master's degree as the first year of resident study.
Details concerning the comprehensive examinations, thesis and academic regulations are available from the Student Affairs Coordinator, Schulich School of Music or from the Music Graduate Handbook (www.mcgill.ca/music/student/graduate/grad-handbook).
Requirements

Language reading examinations:

In two foreign languages (one foreign language for students in composition, music education; none required for students in sound recording and music technology).

Normally, one of these will be German and the other related to the candidate’s field of research.

A third language may be required if considered necessary for the candidate’s research.

Students whose mother tongue is French are exempt from the French Language Reading examination

Note: The language reading examinations must be passed before a candidate will be permitted to sit the Comprehensive examinations.

Comprehensive examination:

MUGS 701 (0) Comprehensive Examination Part 1
MUGS 702 (0) Comprehensive Examination Part 2

Complementary Courses (15-30 credits):

Ten 3-credit graduate courses approved by the Department (the Doctoral Tutorial will be considered a course for purposes of this requirement).

Applicants who have completed an M.A. degree before entering the Ph.D. program will be required to complete at least five approved 3-credit graduate courses beyond the M.A. requirements.

Applicants in composition will be required to complete at least four approved 3-credit graduate courses and two terms of MU CO 722D1/D2 (6) Doctoral Composition Tutorial

Doctoral Colloquium:

Required attendance for four terms of the Doctoral Colloquium.

MUGS 705 (0) Colloquium

Note: Regular attendance and at least one presentation on their thesis research in the Colloquium during the course of their doctoral studies is required.

Composition Performance:

Composition applicants only:

The candidate must present a concert of his/her compositions.

With the permission of the Composition Area Committee, the compositions may be presented as parts of two or three concerts, or as a list of national and international performances since the student began his/her residency.

Doctoral Dissertation:

All courses and language requirements and the comprehensive examinations must be successfully completed before the dissertation is submitted.

54.6 Courses

Students preparing to register should consult Class Schedule online at www.mcgill.ca/student-records/register/class-schedule for the most up-to-date list of courses available; courses may have been added, rescheduled or cancelled after this Calendar was published. Class Schedule lists courses by term and includes days, times, locations, and names of instructors.

Courses with numbers ending D1 and D2 are taught in two consecutive terms (most commonly Fall and Winter). Students must register for both the D1 and D2 components. No credit will be given unless both components (D1 and D2) are successfully completed in consecutive terms.

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

SEMINARS

Enrolment in seminars will normally be limited to 10. Each year a selection of the following courses are offered:

- MUCO 631 Seminar in Composition 1. (3) (3 hours)
- MUCO 632 Seminar in Composition 2. (3) (3 hours)
- MUCO 633 Seminar in Composition 3. (3) (3 hours)
- MUCO 634 Seminar in Composition 4. (3) (3 hours)
- MUCO 635 Seminar in Composition 5. (3) (3 hours)
- MUCO 636 Seminar in Composition 6. (3) (3 hours)
- MUGT 610 Seminar - Music Education 1. (3) (3 hours)
- MUGT 611 Seminar - Music Education 2. (3) (3 hours)
- MUGT 612 Seminar - Music Education 3. (3) (3 hours)
- MUGT 613 Seminar - Music Education 4. (3) (3 hours)
- MUHL 680 Seminar in Musicology 1. (3) (3 hours)
- MUHL 681 Seminar in Musicology 2. (3) (3 hours)
- MUHL 682 Seminar in Musicology 3. (3) (3 hours)
- MUHL 683 Seminar in Musicology 4. (3) (3 hours)
- MUHL 684 Seminar in Musicology 5. (3) (3 hours)
- MUHL 685 Seminar in Musicology 6. (3) (3 hours)
- MUHL 692 Seminar in Music Literature 1. (3) (3 hours)
- MUHL 693 Seminar in Music Literature 2. (3) (3 hours)
- MUHL 694 Seminar in Music Literature 3. (3) (3 hours)
- MUHL 695 Seminar in Music Literature 4. (3) (3 hours)
- MUHL 696 Seminar in Music Literature 5. (3) (3 hours)
- MUHL 697 Seminar in Music Literature 6. (3) (3 hours)
- MUMT 610 Music Technology Seminar 1. (3) (3 hours)
- MUMT 611 Music Technology Seminar 2. (3) (3 hours)
- MUMT 612 Music Technology Seminar 3. (3) (3 hours)
- MUMT 613 Music Technology Seminar 4. (3) (3 hours)
- MUMT 614 Music Technology Seminar 5. (3) (3 hours)
- MUMT 615 Music Technology Seminar 6. (3) (3 hours)
- MUMT 616 Timbre Form-Bearing Dim in Mus. (3) (3 hours)
- MUMT 617 Cog. Dynam. of Mus. Listening. (3) (3 hours)
- MUMT 618 Comp. Model of Music Acoustics. (3) (3 hours)
- MUMT 619 Input Devices for Music. Expr. (3) (3 hours)
- MUMT 620 Gestural Control of Sound Syn. (3) (3 hours)
- MUMT 621 Mus. Info,Retr,Aqc.,Preserv. (3) (3 hours)
- MUMT 622 Time-Freq.,&Param. Rep. of Snds. (3) (3 hours)
- MUPG 590 Vocal Styles and Conventions. (3) (3 hours)
- MUPG 691 Vocal Seminar 1. (3) (3 hours)
- MUPG 692 Vocal Seminar 2. (3) (3 hours)
- MUPG 693 Vocal Treatises and Methods. (3) (3 hours)
- MUPG 694 Vocal Physiology for Singers. (3) (3 hours)
- MUPP 690 Performance Practice Seminar 1. (3) (3 hours)
- MUPP 691 Performance Practice Seminar 2. (3) (3 hours)
- MUPP 692 Performance Practice Seminar 3. (3) (3 hours)
- MUPP 693 Performance Practice Seminar 4. (3) (3 hours)
- MUPP 694 Performance Practice Seminar 5. (3) (3 hours)
- MUPP 695 Performance Practice Seminar 6. (3) (3 hours)
- MUSR 690 Media Theory and Practice Seminar 1. (3) (3 hours)
- MUSR 691 Media Theory and Practice Seminar 2. (3) (3 hours)
- MUSR 692 Media Theory and Practice Seminar 3. (3) (3 hours)
- MUSR 693 Media Theory and Practice Seminar 4. (3) (3 hours)
- MUSR 694 Media Theory and Practice Seminar 5. (3) (3 hours)
- MUSR 695 Media Theory and Practice Seminar 6. (3) (3 hours)
- MUTH 652 Seminar in Music Theory 1. (3) (3 hours)
- MUTH 653 Seminar in Music Theory 2. (3) (3 hours)
- MUTH 654 Seminar in Music Theory 3. (3) (3 hours)
- MUTH 655 Seminar in Music Theory 4. (3) (3 hours)
- MUTH 656 Seminar in Music Theory 5. (3) (3 hours)
- MUTH 657 Seminar in Music Theory 6. (3) (3 hours)

Topics for graduate seminars vary from year to year and are normally chosen according to the individual instructor’s areas of research expertise. A list of detailed seminar descriptions can be found on the Schulich School of Music website prior to Fall registration. The following indicates the scope of offerings with some sample topics. Note: Topics listed will not necessarily be offered in the upcoming year.
**Composition Seminars:** Music After 1945; The Symphony in the Twentieth Century; The Music of Olivier Messiaen; The Music of Claude Vivier.

**Music Technology Seminars:** Advanced Topics in Technological Applications in Music; Advanced Topics in Music Cognition; Human Computer Interaction - Gestural Control of Sound Synthesis.

**Media Theory and Practice Seminars:** Media Technology, Digital Restoration of Archival Recordings, Communications Systems and Standards, Audio Aesthetics of Video Musicals, Classical Music and the Television Medium.

**Music Education Seminars:** Leadership for the Performer and the Pedagogue; Research Methods in Music Education; Understanding the Performing Body.

**Music Literature and Musicology Seminars:** The Music of Bela Bartok; The 19th-century French Symphony; French opera from Carmen to Pelléas; Ethnomusicological Thought Past and Present; Canadian Opera; Gender Enhancement in the Film Musical; Gender and Jazz; Music Printing in the 16th-century; The “Roman de Fauvel”; The German Lied; Problems in Verdi Studies; Studies in the Wagner Operas; Musical Aesthetics.

**Music Theory Seminars:** Theory and Analysis of Classical Form; Mathematical Set and Group Theory Models; Theories of Musical Rhythm and Meter; The Late Music of Igor Stravinsky; Tuning & Temperament; Bruckner and Heavy Metal: From Chord Power to Power Chord.

**Performance Practice Seminars:** Performance Practice of the Beethoven Piano Sonatas; Performance Practice and the Standard Repertoire (18th and early 19th century); 20th- and 21st-century Performance Practice; Musical Practices of Glenn Gould.

**COURSES**

**MUCC 541 ADVANCED DIGITAL STUDIO COMPOSITION 1. (3) (Pre-requisite: MUCC 342 or permission of the instructor.)** Advanced topics in digital studio composition. Aesthetics and poetics of electroacoustic composition. Analytical approaches to this repertoire. Use of digital signal processing and synthesis techniques. Creation of complete pieces incorporating music technology which may include a live performance component.

**MUCC 542 ADVANCED DIGITAL STUDIO COMPOSITION 2. (3) (Pre-requisite: MUCC 541.)** Further advanced topics in digital studio composition culminating in a complete large-scale work incorporating music technology, including computer-assisted composition, analysis/resynthesis techniques, and new gestural controllers for live performance of digital musical instruments.

**MUCC 622D1 (3), MUCC 622D2 (3) COMPOSITION TUTORIAL.** (Students must register for both MUCC 622D1 and MUCC 622D2) (No credit will be given for this course unless both MUCC 622D1 and MUCC 622D2 are successfully completed in consecutive terms)

**MUCC 631 SEMINAR IN COMPOSITION 1. (3) (3 hours)**

**MUCC 632 SEMINAR IN COMPOSITION 2. (3) (3 hours)**

**MUCC 633 SEMINAR IN COMPOSITION 3. (3) (3 hours)**

**MUCC 634 SEMINAR IN COMPOSITION 4. (3) (3 hours)**

**MUCC 635 SEMINAR IN COMPOSITION 5. (3) (3 hours)**

**MUCC 636 SEMINAR IN COMPOSITION 6. (3) (3 hours)**

**MUCC 722D1 (3), MUCC 722D2 (3) DOCTORAL COMPOSITION TUTORIAL.** (Students must register for both MUCC 722D1 and MUCC 722D2) (No credit will be given for this course unless both MUCC 722D1 and MUCC 722D2 are successfully completed in consecutive terms)

**MUCT 602 SEMINAR IN CHORAL TECHNIQUES. (3) (3 hours)**

**MUCT 603 SEMINAR IN CHORAL TECHNIQUES. (3) (3 hours)**

**MUEN 560 CHAMBER MUSIC ENSEMBLE. (1)**

**MUEN 561 2ND CHAMBER MUSIC ENSEMBLE. (1) (1 hour) (Pre-requisite: Audition.)** Chamber music of the Medieval, Renaissance and Baroque periods.

**MUEN 572 CAPPELLA ANTICA. (2) (4 hours) (Prerequisite: Audition.)** An ensemble of 8 to 12 voices specializing in early music. N.B. This ensemble may substitute as a Basic Ensemble in programs that specify Choral Ensemble, with Departmental approval.

**MUEN 573 BAROQUE ORCHESTRA. (2) (4 hours) (Prerequisites: Audition AND MUEN 480 AND a prerequisite or corequisite of MUPG 381. Additional prerequisite for keyboard players: MUPG 372 with a grade of A-) Open to singers and instrumentalists, this ensemble specializes in chamber music primarily of the Baroque era.

**MUEN 578 SONG INTERPRETATION 1. (1) (2 hours) (Prerequisite: Audition.)** Normally open only to Voice and Piano Performance students. Study of the standard song repertoire with emphasis on the singer and pianist as partners. A public recital will be given at the end of each term.

**MUEN 579 SONG INTERPRETATION 2. (1)**

**MUEN 580 EARLY MUSIC ENSEMBLE. (1) (Prerequisite: Audition. Prerequisite or corequisite for keyboard players: MUPG 272.) An ensemble of 4-6 vocalists and instrumentalists which performs music of the Medieval, Renaissance and Baroque periods.

**MUEN 584 STUDIO ACCOMPANYING. (1) (4 hours) (Prerequisite: MUEN 583 formerly MUEN 483.)** Highly qualified accompanists will be assigned to work independently with studio teachers and their students.

**MUEN 587 CAPPELLA MCGILL. (2) (4 hours) (Prerequisite: Audition.) (Note: May be taken instead of Choral Ensemble.) An ensemble of 16 voices performing challenging repertoire from the Renaissance to the present day. Since the expectation is a level of performance equivalent to a professional chamber ensemble, singers wishing to join this group should have had considerable ensemble experience, and advanced vocal and sight-reading skills.

**MUEN 590 MCGILL WINDS. (2) (4-6 hours) (Prerequisite: Audition.)

**MUEN 592 CHAMBER JAZZ ENSEMBLE. (2) (Restriction: Open to Jazz Performance students only.) This ensemble will deal with the extensive repertoire of music which exists for small jazz orchestra (9-13 instruments).

**MUEN 593 CHORAL ENSEMBLES. (2) (4 hours) (Prerequisite: Audition.) (Section 001 Chamber Singers: a group of approximately 24 mixed voices which explores the a capella repertoire of all periods as well as works with chamber accompaniment.) (Section 002 Concert Choir: an ensemble of approximately 60 voices (S.A.T.B.) which performs the repertoire from all periods appropriate to a group of this size.) (Section 003 University Chorus: a mixed chorus of approximately 100 which performs a variety of choral material including both traditional and popular selections.) (Section 004 Women's Chorale: an ensemble of approximately 40 women stressing the fundamentals of singing and ensemble participation.) Students enrolling in Choral Ensembles will be assigned to one of the above groups.

**MUEN 594 CONTEMPORARY MUSIC ENSEMBLE. (2) (4 hours) (Prerequisite: Audition.)

**MUEN 595 JAZZ ENSEMBLES. (2) (3-4 hours) (Prerequisite: Audition.)

**MUEN 596 OPERA REPETITEUR. (2) (6 hours) (Restriction: Open by audition to advanced pianists, and to students in conducting, who are interested in training as operatic coaches. Students enrolled for piano instruction at McGill must also have their practical teacher's approval) Supervised coaching of singers, and playing of scenes and productions; rehearsal pianists and backstage conducting responsibilities.

**MUEN 597 ORCHESTRAL ENSEMBLES. (2) (6-7 hours) (Prerequisite: Audition.)**
MUEN 684 Studio Accompanying. (2) (Prerequisite: Audition; 2 hours) Students will be assigned to work as accompanists with performance teachers and their students.

MUEN 688 Multiple Ensembles. (2) Student participation in more than one ensemble in different concert periods over the course of a term.

MUEN 696 Opera Theatre. (2) (3-6 hours) (Prerequisite: open to all Graduate Performance and Artist Diploma students who have completed MUEN 496 or its equivalent.) Individual coaching in acting, movement and role preparation; possibility for roles in Opera McGill productions (by audition).

MUGS 614 Reading Course 1. (3) Independent study of an approved topic or topics under the guidance of a supervisor. Topics will be chosen to suit individual needs and interests. The extent of reading, synthesis, and reporting will be agreed upon by the supervisor and the student at the beginning of the course.

MUGS 615 Reading Course 2. (3) Independent study of an approved topic or topics under the guidance of a supervisor. Topics will be chosen to suit individual needs and interests. The extent of reading, synthesis, and reporting will be agreed upon by the supervisor and the student at the beginning of the course.

MUGS 635 Research Paper 1. (9)

MUGS 635D1 (4.5), MUGS 635D2 (4.5) Research Paper 1. (Students must register for both MUGS 635D1 and MUGS 635D2) (No credit will be given for this course unless both MUGS 635D1 and MUGS 635D2 are successfully completed in consecutive terms) (MUGS 635D1 and MUGS 635D2 together are equivalent to MUGS 635)

MUGS 636 Research Paper 2. (9)

MUGS 636D1 (4.5), MUGS 636D2 (4.5) Research Paper 2. (Students must register for both MUGS 636D1 and MUGS 636D2) (No credit will be given for this course unless both MUGS 636D1 and MUGS 636D2 are successfully completed in consecutive terms) (MUGS 636D1 and MUGS 636D2 together are equivalent to MUGS 636)

MUGS 675 Special Project. (3) (Requires Departmental approval)

MUGS 675D1 (1.5), MUGS 675D2 (1.5) Special Project. (Students must register for both MUGS 675D1 and MUGS 675D2) (No credit will be given for this course unless both MUGS 675D1 and MUGS 675D2 are successfully completed in consecutive terms) (MUGS 675D1 and MUGS 675D2 together are equivalent to MUGS 675)

MUGS 683 Master’s Thesis Research 1. (3)

MUGS 684 Master’s Thesis Research 2. (6)

MUGS 685 Master’s Thesis Research 3. (9)

MUGS 686 Master’s Thesis Research 4. (12)

MUGS 687 Master’s Thesis. (12)

MUGS 694 Special Topic Seminar. (3) (3 hours)

MUGS 695 Special Topic Seminar. (3) (3 hours)

MUGS 701 Comprehensive Examination Part 1. (0)

MUGS 701D1 (0), MUGS 701D2 (0) Comprehensive Examination Part 1. (Students must register for both MUGS 701D1 and MUGS 701D2) (No credit will be given for this course unless both MUGS 701D1 and MUGS 701D2 are successfully completed in consecutive terms) (MUGS 701D1 and MUGS 701D2 together are equivalent to MUGS 701)

MUGS 702 Comprehensive Examination Part 2. (0)

MUGS 702D1 (0), MUGS 702D2 (0) Comprehensive Examination Part 2. (Students must register for both MUGS 702D1 and MUGS 702D2) (No credit will be given for this course unless both MUGS 702D1 and MUGS 702D2 are successfully completed in consecutive terms) (MUGS 702D1 and MUGS 702D2 together are equivalent to MUGS 702)

MUGS 705 Colloquium. (0)

MUGS 706D1 (9), MUGS 706D2 (9) Colloquium. (Students must register for both MUGS 706D1 and MUGS 706D2) (No credit will be given for this course unless both MUGS 706D1 and MUGS 706D2 are successfully completed in consecutive terms) (MUGS 706D1 and MUGS 706D2 together are equivalent to MUGS 706)

MUGT 610 Seminar - Music Education 1. (3) (3 hours)

MUGT 611 Seminar - Music Education 2. (3) (3 hours)

MUGT 612 Seminar - Music Education 3. (3) (3 hours)

MUGT 613 Seminar - Music Education 4. (3) (3 hours)

MUHL 592 Proseminar in Musicology. (3) (3 hours) (Prerequisites: MUHL 184 and MUHL 185 and MUTH 211 OR MUCO 240 and MUSP 231) (Prerequisite: open to all students in a Major or Honours program in Music History, and to students in other programs by permission of instructor) (Normally alternates with MUHL 591) Study of selected methodologies in musicology through critical examination of significant texts. Topics may include approaches to historiography, biography, editing and source studies, as well as aesthetics, literary criticism, semiotics, feminist musicology, and ideology critique. Works by Adler, Adorno, Dahlhaus, Kerman, McClary, Meyer, Nattiez, and Subotnik, among others, will be addressed.

MUHL 570 Research Methods in Music. (3) (3 hours) (Prerequisites: MUHL 184 and MUHL 185 and MUTH 211 OR MUCO 240 and MUSP 231. Additional prerequisite: one MUHL or MUPP course at the 300 level or higher, or permission of instructor.) Survey and critical evaluation of research- and performance-related tools; composers’ collected editions, monuments of music, bibliographies of music and music literature, discographies, directories, and databases. Topics will include: developing bibliographies, structuring written arguments, assessing academic and popular writings about music, and understanding the task of the music editor.

MUHL 591D1 (1.5), MUHL 591D2 (1.5) Paleography. (1 hour) (Prerequisites: MUHL 184 and MUHL 185 and MUTH 211 OR MUCO 240 and MUSP 231. Restriction: U3 honours students in History) (Normally alternates with MUHL 529) (Students must register for both MUHL 591D1 and MUHL 591D2) (No credit will be given for this course unless both MUHL 591D1 and MUHL 591D2 are successfully completed in consecutive terms) The theory and practice of musical transcription for the period 1100 to 1600. Black modal notation, Franconian notation, French and Italian Ars Nova notation, Manerism, while mensural notation, proportions, and lute and keyboard tablatures will be studied.

MUHL 653 Music Aesthetics and Criticism. (3) (3 hours)

MUHL 680 Seminar in Musicology 1. (3) (3 hours)

MUHL 681 Seminar in Musicology 2. (3) (3 hours)

MUHL 682 Seminar in Musicology 3. (3) (3 hours)

MUHL 683 Seminar in Musicology 4. (3) (3 hours)

MUHL 684 Seminar in Musicology 5. (3) (3 hours)

MUHL 685 Seminar in Musicology 6. (3) (3 hours)

MUHL 692 Seminar in Music Literature 1. (3) (3 hours)

MUHL 693 Seminar in Music Literature 2. (3) (3 hours)

MUHL 694 Seminar in Music Literature 3. (3) (3 hours)

MUHL 695 Seminar in Music Literature 4. (3) (3 hours)

MUHL 696 Seminar in Music Literature 5. (3) (3 hours)

MUHL 697 Seminar in Music Literature 6. (3) (3 hours)

MUIN 600 Vocal Repertoire Coaching 1. (2) (1 hour) A course in which the performer will have individual coaching sessions on repertoire, with emphasis on musical and linguistic nuance.

MUIN 601 Vocal Repertoire Coaching 2. (2) (1 hour)

MUIN 602 Vocal Repertoire Coaching 3. (2) Individual coaching sessions on advanced vocal repertoire, with emphasis on musical and linguistic nuance.
MUIN 700 DOCTORAL REPERTOIRE COACHING 1. (2) Individual tutorial coaching sessions in repertoire, with emphasis on musical and linguistic nuance.

MUIN 701 DOCTORAL REPERTOIRE COACHING 2. (2) Individual tutorial coaching sessions in repertoire, with emphasis on musical and linguistic nuance.

MUIN 702 DOCTORAL REPERTOIRE COACHING 3. (2) Individual tutorial coaching sessions in repertoire, with emphasis on musical and linguistic nuance.

MUIN 703 DOCTORAL REPERTOIRE COACHING 4. (2) Individual tutorial coaching sessions in repertoire, with emphasis on musical and linguistic nuance.

MUIN 703 DOCTORAL REPERTOIRE COACHING 5. (2) Individual tutorial coaching sessions in repertoire, with emphasis on musical and linguistic nuance.

MUIN 703 DOCTORAL REPERTOIRE COACHING 6. (2) Individual tutorial coaching sessions in repertoire, with emphasis on musical and linguistic nuance.

MUJZ 601 JAZZ PEDAGOGY. (3) (3 hours) A course designed to prepare students to teach jazz-related subjects at the university and professional level, with emphasis on ensemble direction and the instruction of improvisation, as well as course and curriculum development. Various pedagogical methods, philosophies, rehearsal techniques, and materials will be investigated.

MUJZ 640 JAZZ COMPOSITION & ARRANGING 1. (2) (2 hours) Analysis and application of a variety of jazz and 20th Century compositional and arranging techniques, including writing for small and medium size jazz ensembles.

MUJZ 641 JAZZ COMPOSITION & ARRANGING 2. (2) Students compose and arrange for a variety of instrumental combinations including large jazz ensembles of ten or more instruments.

MUJZ 644 JAZZ REPERTOIRE PROJECT 1. (2) Students investigate an approved area of jazz orchestral repertoire, under the supervision of a full-time faculty member.

MUJZ 645 JAZZ REPERTOIRE PROJECT 2. (2) (Prerequisite: MUJZ 644.) Jazz repertoire for any ensemble format may be explored.

MUMT 605 DIGITAL SOUND SYNTHESIS AND AUDIO PROCESS. (3) Basic principles of digital sound synthesis including techniques such as additive synthesis, frequency modulation, tuned resonators, waveshaping and digital audio processing techniques including simple delay systems, filters, reverberators, spatial controllers, etc. will be explored.

MUMT 609 MUSIC, MEDIA AND TECHNOLOGY PROJECT. (3) (3 research/project hours) Independent music technology project. Students will prepare a statement of objectives, a comprehensive project design and a schedule of work, and will undertake the project on appropriate music technology platforms.

MUMT 610 MUSIC TECHNOLOGY SEMINAR 1. (3) (3 hours) Advanced topics in computer applications in music will be examined. Students will be expected to present critical analyses of current research and 2) develop and implement software demonstrations.

MUMT 611 MUSIC TECHNOLOGY SEMINAR 2. (3) (3 hours) Advanced topics in computer applications in music will be examined. Students will be expected to present critical analyses of current research and 2) develop and implement software demonstrations.

MUMT 612 MUSIC TECHNOLOGY SEMINAR 3. (3) (3 hours) Advanced topics in computer applications in music will be examined. Students will be expected to present critical analyses of current research and 2) develop and implement software demonstrations.

MUMT 613 MUSIC TECHNOLOGY SEMINAR 4. (3) (3 hours) Advanced topics in computer applications in music will be examined. Students will be expected to present critical analyses of current research and 2) develop and implement software demonstrations.

MUMT 614 MUSIC TECHNOLOGY SEMINAR 5. (3) (3 hours) Advanced topics in computer applications in music will be examined. Students will be expected to present critical analyses of current research and 2) develop and implement software demonstrations.

MUMT 615 MUSIC TECHNOLOGY SEMINAR 6. (3) (3 hours) Advanced topics in computer applications in music will be examined. Students will be expected to present critical analyses of current research and 2) develop and implement software demonstrations.

MUPG 620 PERFORMANCE TUTORIAL 1. (4) Individual instruction in instrumental performance, jazz composition and arranging and jazz improvisation according to performing specialization.

MUPG 621 PERFORMANCE TUTORIAL 2. (4) Individual instruction in instrumental performance, jazz composition and arranging and jazz improvisation according to performing specialization.

MUPG 622 PERFORMANCE TUTORIAL 3. (4) Individual instruction in instrumental performance, jazz composition and arranging and jazz improvisation according to performing specialization.

MUPG 623 PERFORMANCE TUTORIAL 4. (4) Individual instruction in instrumental performance, jazz composition and arranging and jazz improvisation according to performing specialization.

MUPG 624 PERFORMANCE TUTORIAL 5. (4) Individual instruction in instrumental performance, jazz composition and arranging and jazz improvisation according to performing specialization.

MUPG 625 PERFORMANCE TUTORIAL 6. (4) Individual instruction in instrumental performance, jazz composition and arranging and jazz improvisation according to performing specialization.

MUPG 626 JAZZ PERFORMANCE/COMPOSITION TUTORIAL 1. (4) Individual instruction in instrumental performance, jazz composition and arranging and jazz improvisation according to performing specialization.

MUPG 634 PERFORMANCE TUTORIAL 1. (4) Individual instruction in instrumental performance, jazz composition and arranging and jazz improvisation according to performing specialization.

MUPG 635 PERFORMANCE TUTORIAL 2. (4) Individual instruction in instrumental performance, jazz composition and arranging and jazz improvisation according to performing specialization.

MUPG 636 PERFORMANCE TUTORIAL 3. (4) Individual instruction in instrumental performance, jazz composition and arranging and jazz improvisation according to performing specialization.

MUPG 640 MEDIA PROJECT. (3) (Restriction: Open to students in the Graduate Diploma in Professional Performance.) Practical aspects of media presentation, marketing, and distribution. Professional portfolio development using one or more of the following options: e-press kit, print media, or demo (video or audio).

MUPG 641 PERFORMANCE PROJECT 1. (3) (Restriction: Open to students in the Graduate Diploma in Professional Performance.) A composition commissioning, a research-related performance project (e.g., transcription, performance edition) or inter-disciplinary collaboration (music technology, dance, etc.) approved by the department.

MUPG 642 PERFORMANCE PROJECT 2. (6) (Specific restrictions may apply to the studio recording option depending on available resources.) (Restriction: Open to students in the Graduate Diploma in Professional Performance.) A performance project resulting in a public solo or chamber music recital (normally 35-40 minutes), preparation/presentation of a minor operatic role (B list), studio recording, or presentation of concerto with program or liner notes approved by the department.

MUPG 643 PERFORMANCE PROJECT 3. (6) (Restriction: Open to students in the Graduate Diploma in Professional Performance.) A performance project such as quick study or repertoire examination approved by the department.
MUPG 644 PERFORMANCE PROJECT 4. (9) (Specific restrictions may apply to the studio recording option depending upon available resources.) (Restriction: Open to students in the Graduate Diploma in Professional Performance.) A performance project resulting in a public solo or chamber music recital (normally 60 - 75 minutes), preparation/presentation of a major operatic role (A List), or studio recording with program or liner notes approved by the department.

MUPG 645 PERFORMANCE PROJECT 5. (12) (Specific restrictions may apply to the studio recording option depending upon available resources.) (Restriction: Open to students in the Graduate Diploma in Professional Performance.) A substantial public solo or chamber music recital (normally 70 - 90 minutes) or studio recording with program or liner notes approved by the department.

MUPG 646 SCORE- AND SIGHT-READING 1. (1) Playing operatic piano-vocal scores at sight. Realizing at the piano operatic orchestral scores with emphasis on repertoire from before 1800.

MUPG 647 SCORE- AND SIGHT-READING 2. (1) Playing operatic piano-vocal scores at sight. Realizing at the piano operatic orchestral scores with emphasis on repertoire from after 1800.

MUPG 650 VOICE LECTURE - DEMONSTRATION. (3) The candidate is required to present his or her two voice students in a public mini-recital, to discuss their progress and to trace the pedagogical focus and choices that have been made during their two semesters of study.

MUPG 652 JAZZ ENSEMBLE RECITAL PROJECT. (9) (Restriction: Open to students in the b and c streams of the Jazz Performance option only.) A 60-75 minute recital presenting a repertoire of either original compositions and arrangements or previously composed jazz literature (depending upon stream), at least half of which must be for a large ensemble. Programme notes must be provided.

MUPG 653 OPERA COACH PROJECT. (6) Preparation and performance of standard operatic repertoire and programme notes.

MUPG 654 OPERA COACH PERFORMANCE. (6) Preparation and performance of specialized operatic repertoire.

MUPG 655 OPERA COACH QUICK STUDY. (6) With one month’s notice, the candidate must prepare an assigned operatic score, playing while singing all the parts. Historical research, stylistic performance, musical choices and linguistic command of the score are required.

MUPG 656 VOCAL QUICK STUDY. (6) With one month’s notice, the candidate must prepare an assigned group of songs, oratorios or operatic roles. Historical research, stylistic performance practices, musical and dramatic choices (where applicable) and vocal command of the material is required.

MUPG 656D1 (3), MUPG 656D2 (3) VOCAL QUICK STUDY. (Students must register for both MUPG 656D1 and MUPG 656D2) (No credit will be given for this course unless both MUPG 656D1 and MUPG 656D2 are successfully completed in consecutive terms) (MUPG 656D1 and MUPG 656D2 together are equivalent to MUPG 656) Performance of a complete operatic role from the specialized repertoire.

MUPG 657 OPERA PERFORMANCE. (6) Performance of a complete operatic role from the specialized repertoire.

MUPG 658 OPERA PERFORMANCE. (6) Performance of a complete operatic role from the standard repertoire.

MUPG 658D1 (3), MUPG 658D2 (3) OPERA PERFORMANCE. (Students must register for both MUPG 658D1 and MUPG 658D2) (No credit will be given for this course unless both MUPG 658D1 and MUPG 658D2 are successfully completed in consecutive terms) (MUPG 658D1 and MUPG 658D2 together are equivalent to MUPG 658) Performance of a complete operatic role from the specialized repertoire.

MUPG 659 PERFORMANCE IN RECORDING MEDIA. (9) The candidate must submit a 60-75 minute audio and/or video document of his or her performances, compiled from various media sources. This might include radio, television, and/or studio recordings. All of the music must be composed and arranged by the candidate.

MUPG 659D1 (4.5), MUPG 659D2 (4.5) PERFORMANCE IN RECORDING MEDIA. (Students must register for both MUPG 659D1 and MUPG 659D2) (No credit will be given for this course unless both MUPG 659D1 and MUPG 659D2 are successfully completed in consecutive terms) (MUPG 659D1 and MUPG 659D2 together are equivalent to MUPG 659) The candidate must submit a 60-75 minute audio and/or video document of his or her performances, compiled from various media sources. This might include radio, television, and/or studio recordings. All of the music must be composed and arranged by the candidate.

MUPG 660 SOLO RECITAL PROJECT 1. (12) Thesis recital (solo repertoire) and programme notes.

MUPG 660D1 (6), MUPG 660D2 (6) SOLO RECITAL PROJECT 1. (Students must register for both MUPG 660D1 and MUPG 660D2) (No credit will be given for this course unless both MUPG 660D1 and MUPG 660D2 are successfully completed in consecutive terms) (MUPG 660D1 and MUPG 660D2 together are equivalent to MUPG 660) Thesis recital (solo repertoire) and programme notes.

MUPG 661 CHAMBER RECITAL PROJECT 1. (12) Thesis recital (chamber music repertoire) and programme notes.

MUPG 661D1 (6), MUPG 661D2 (6) CHAMBER RECITAL PROJECT 1. (Students must register for both MUPG 661D1 and MUPG 661D2) (No credit will be given for this course unless both MUPG 661D1 and MUPG 661D2 are successfully completed in consecutive terms) (MUPG 661D1 and MUPG 661D2 together are equivalent to MUPG 661) Thesis recital (chamber music repertoire) and programme notes.

MUPG 662 SOLO AND CHAMBER MUSIC RECITAL. (12)

MUPG 662D1 (6), MUPG 662D2 (6) SOLO AND CHAMBER MUSIC RECITAL. (Students must register for both MUPG 662D1 and MUPG 662D2) (No credit will be given for this course unless both MUPG 662D1 and MUPG 662D2 are successfully completed in consecutive terms) (MUPG 662D1 and MUPG 662D2 together are equivalent to MUPG 662) Thesis recital (chamber music repertoire) and programme notes.

MUPG 663 QUICK STUDY EXAMINATION. (6) (To be successfully completed before the first recital is performed)

MUPG 663D1 (3), MUPG 663D2 (3) QUICK STUDY EXAMINATION. (Students must register for both MUPG 663D1 and MUPG 663D2) (No credit will be given for this course unless both MUPG 663D1 and MUPG 663D2 are successfully completed in consecutive terms) (MUPG 663D1 and MUPG 663D2 together are equivalent to MUPG 663) Thesis recital (mixed repertoire) and programme notes.

MUPG 664 REPERTOIRE EXAMINATION. (6)

MUPG 664D1 (3), MUPG 664D2 (3) REPERTOIRE EXAMINATION. (Students must register for both MUPG 664D1 and MUPG 664D2) (No credit will be given for this course unless both MUPG 664D1 and MUPG 664D2 are successfully completed in consecutive terms) (MUPG 664D1 and MUPG 664D2 together are equivalent to MUPG 664) Thesis recital (mixed repertoire) and programme notes.

MUPG 665D1 (6), MUPG 665D2 (6) ACCOMPANYING RECITAL PROJECT. (Students must register for both MUPG 665D1 and MUPG 665D2) (No credit will be given for this course unless both MUPG 665D1 and MUPG 665D2 are successfully completed in consecutive terms) (MUPG 665D1 and MUPG 665D2 together are equivalent to MUPG 665) Thesis recital (mixed repertoire) and programme notes.
MUPG 667 SOLO RECITAL 2. (12)
MUPG 667D1 (6), MUPG 667D2 (6) SOLO RECITAL 2. (Students must register for both MUPG 667D1 and MUPG 667D2) (No credit will be given for this course unless both MUPG 667D1 and MUPG 667D2 are successfully completed in consecutive terms) (MUPG 667D1 and MUPG 667D2 together are equivalent to MUPG 667)

MUPG 668 CHAMBER MUSIC RECITAL 2. (12)
MUPG 668D1 (6), MUPG 668D2 (6) CHAMBER MUSIC RECITAL 2. (Students must register for both MUPG 668D1 and MUPG 668D2) (No credit will be given for this course unless both MUPG 668D1 and MUPG 668D2 are successfully completed in consecutive terms) (MUPG 668D1 and MUPG 668D2 together are equivalent to MUPG 668)

MUPG 670 ADVANCED CONTINUO 1. (2) A historically-oriented study of the principles of figured bass. Standard idioms from historical treatises will be introduced. Preparation of operatic excerpts from the standard high Baroque repertory is required.

MUPG 671 ADVANCED CONTINUO 2. (2) (Prerequisite: MUPG 670) A study of the many different styles of figured bass accompaniment as revealed in contemporary sources. The emphasis will be on realization at the keyboard of representative 17th- and 18th-century operatic recitatives and arias.

MUPG 672D1 (1.5), MUPG 672D2 (1.5) LITURGICAL IMPROVISATION. (1 1/2 hours) (Students must register for both MUPG 672D1 and MUPG 672D2) (No credit will be given for this course unless both MUPG 672D1 and MUPG 672D2 are successfully completed in consecutive terms) The study and practice of cantus firmus-based improvisation according to selected stylistic models so as to provide diversity of techniques, styles and tonalities. Free improvisation is studied in conjunction with C.F. improvisation. Modulation is taught in both C.F.-based and free improvisation; emphasis being placed on clarity and liturgical appropriateness.

MUPG 675 SPECIAL PROJECT IN PERFORMANCE 1. (3) (Requires Departmental approval)
MUPG 675D1 (1.5), MUPG 675D2 (1.5) SPECIAL PROJECT IN PERFORMANCE 1. (Students must register for both MUPG 675D1 and MUPG 675D2) (No credit will be given for this course unless both MUPG 675D1 and MUPG 675D2 are successfully completed in consecutive terms) The study and practice of cantus firmus-based improvisation according to selected stylistic models so as to provide diversity of techniques, styles and tonalities. Free improvisation is studied in conjunction with C.F. improvisation. Modulation is taught in both C.F.-based and free improvisation; emphasis being placed on clarity and liturgical appropriateness.

MUPG 677 SEMINAR IN PERFORMANCE TOPICS 1. (3) (3 hours)
MUPG 678 SEMINAR IN PERFORMANCE TOPICS 2. (3) (3 hours)
MUPG 681 PIANO SEMINAR 1. (2) (3 hours.) Comparative studies of recorded solo and ensemble repertoire, and lecture-recital presentations reflecting knowledge of historical context and performance practice.

MUPG 682 PIANO SEMINAR 2. (2) (3 hours.) Detailed critiques of in-class teaching, and general discussion of preparation for competitions and academic job applications.
MUPG 685 MASTER CLASS - 20TH-CENTURY PIANO MUSIC. (3) (3 hours) Students will explore the piano repertoire of the 20th century. Repertoire will include such diverse music as that of Milhaud, Ives, Boulez, Berio, etc., as well as the recent Canadian music of Tremblay, Mather, etc. Performance of work(s) studied is a requirement for the course.
MUPG 686 MASTER CLASS - STRING CHAMBER MUSIC. (3) (3 hours) Advanced studies of the chamber music repertoire, intended for graduate string players. Students will gain firsthand experience playing, reading (in rotation) and studying works both with their colleagues and occasionally with the instructor; discussion of master recordings and active listening with scores.

MUPG 691 VOCAL SEMINAR 1. (3) (3 hours) (Restriction: Open to singers, pianists, and conductors with permission of instructor.)
MUPG 692 VOCAL SEMINAR 2. (3) (3 hours) (Restriction: Open to singers, pianists, and conductors with permission of instructor.)
MUPG 693 VOCAL TREATISES AND METHODS. (3) (3 hours)
MUPG 694 VOCAL PHYSIOLOGY FOR SINGERS. (3) (3 hours) An anatomical study of the entire vocal mechanism; how to keep it functioning in a healthy manner, the various possible dysfunctions and how to diagnose and treat them.

MUPG 720 D.MUS. PERFORMANCE TUTORIAL 1. (4) Individual instrumental or vocal tutorial. Advanced technical and interpretive training as well as recital preparation.
MUPG 721 D.MUS. PERFORMANCE TUTORIAL 2. (4) Individual instrumental or vocal tutorial. Advanced technical and interpretive training as well as recital preparation.
MUPG 722 D.MUS. PERFORMANCE TUTORIAL 3. (4) Individual instrumental or vocal tutorial. Advanced technical and interpretive training as well as recital preparation.
MUPG 723 D.MUS. PERFORMANCE TUTORIAL 4. (4) Individual instrumental or vocal tutorial. Advanced technical and interpretive training as well as recital preparation.
MUPG 724 D.MUS. PERFORMANCE TUTORIAL 5. (4) Individual instrumental or vocal tutorial. Advanced technical and interpretive training as well as recital preparation.
MUPG 725 D.MUS. PERFORMANCE TUTORIAL 6. (4) Individual instrumental or vocal tutorial. Advanced technical and interpretive training as well as recital preparation.
MUPG 730 D.MUS. PERFORMANCE TUTORIAL 8. (6) Individual instrumental or vocal tutorial. Advanced technical and interpretive training as well as recital preparation.
MUPG 731 D.MUS. PERFORMANCE TUTORIAL 9. (6) Individual instrumental or vocal tutorial. Advanced technical or interpretive training as well as recital preparation.
MUPG 732 D.MUS. PERFORMANCE TUTORIAL 10. (6) Individual instrumental or vocal tutorial. Advanced technical and interpretive training as well as recital preparation.
MUPG 733 D.MUS. PERFORMANCE TUTORIAL 11. (6) Individual instrumental or vocal tutorial. Advanced technical and interpretive training as well as recital preparation.
MUPG 760 DOCTORAL RECITAL 1. (12) A full-length public recital which includes a minimum of 60 minutes of music.
MUPG 767 DOCTORAL RECITAL 2. (12) A full-length public recital which includes a minimum of 60 minutes of music.
MUPG 770 DOCTORAL LECTURE - RECITAL PROJECT. (12) The lecture-recital comprises a minimum of 35 minutes of music and 25 to 35 minutes of oral presentation. The examiners and audience may question the candidate following the lecture-recital. The subject and repertoire will also be treated in a project paper, submitted within two months of the lecture-recital.
MUPP 690 PERFORMANCE PRACTICE SEMINAR 1. (3) (3 hours)
MUPP 691 PERFORMANCE PRACTICE SEMINAR 2. (3) (3 hours)
MUPP 692 PERFORMANCE PRACTICE SEMINAR 3. (3) (3 hours)
MUPP 693 PERFORMANCE PRACTICE SEMINAR 4. (3) (3 hours)
MUPP 694 PERFORMANCE PRACTICE SEMINAR 5. (3) (3 hours)
MUPP 695 PERFORMANCE PRACTICE SEMINAR 6. (3) (3 hours)
MUSR 629D1 (2), MUSR 629D2 (2) TECHNICAL EAR TRAINING. (1 hour tutorial, 2 hours laboratory.) (Students must register for both MUSR 629D1 and MUSR 629D2.)(No credit will be given for this course unless both MUSR 629D1 and MUSR 629D2 are successfully completed in consecutive terms.) (Restriction: Not open to students who have taken MUMT 629D1/D2.) This course will, through a sequence of specific auditory exercises, develop and improve students’ aural sensitivity to small changes in sound quality. Students train to identify spectral variables in sound, develop stable reference of sound quality and learn about spectral characteristics of musical instruments.
MUSR 631D1 (2), MUSR 631D2 (2) ADVANCED TECHNICAL EAR TRAINING. (1 hour tutorial, 2 hours laboratory) (Prerequisite: MUMT 629.) (Students must register for both MUSR 631D1 and MUSR 631D2.) (No credit will be given for this course unless both MUSR 631D1 and MUSR 631D2 are successfully completed in consecutive terms.) (Restriction: Not open to students who have taken MUMT 631D1/D2.) Included in course are exercises for developing some of the following aural skills: identification and quantification of spatial parameters of sound image, nonlinear and transient distortion auditibility, identification of coherent and incoherent noise, sound source identification in complex textures, sound enhancement and reconstruction.

MUSR 667 DIGITAL STUDIO TECHNOLOGY. (3) (3 hours lecture) Technical and operational characteristics of different digital recording systems currently employed by the recording industry.

MUSR 668 DIGITAL/ANALOG AUDIO EDITING. (3) (1 hour tutorial, 3 hours studio time.) Using analog and digital record/playback equipment, students learn, through practice, the art of replacing, patching, rebalancing, reconstructing, or generally speaking, improving recorded music through editing. Teaching will include cut and splice editing, disk-based editing, and editing by transfer and mixing.

MUSR 669 TOPICS: CLASSICAL MUSIC RECORDING. (3) (3 hours lecture) Issues involving classical music recording. Topics may include: analysis of performance styles, acoustics of concert halls, production of music videos, seminars with recording producers, tonmeisters, classical music in multimedia, and others.

MUSR 669D1 (1.5), MUSR 669D2 (1.5) TOPICS: CLASSICAL MUSIC RECORDING. (3 hours lecture) (Students must register for both MUSR 669D1 and MUSR 669D2.) (No credit will be given for this course unless both MUSR 669D1 and MUSR 669D2 are successfully completed in consecutive terms.) (MUSR 669D1 and MUSR 669D2 together are equivalent to MUSR 669.) Issues involving classical music recording. Topics may include: analysis of performance styles, acoustics of concert halls, production of music videos, seminars with recording producers, tonmeisters, classical music in multimedia, and others.

MUSR 670D1 (5), MUSR 670D2 (5) RECORDING THEORY AND PRACTICE 1. (3 hours seminar, 6 hours studio time.) (Prerequisite: MUMT 300.) (Students must register for both MUSR 670D1 and MUSR 670D2.) (No credit will be given for this course unless both MUSR 670D1 and MUSR 670D2 are successfully completed in consecutive terms.) Theoretical and practical study of recording equipment, procedures and techniques. Recording sessions and live recording, using the recording studio, concert hall and portable equipment for on-location recording. Also included will be an introduction to the areas of radio drama, broadcast recording and radio commercials.

MUSR 671D1 (5), MUSR 671D2 (5) RECORDING THEORY AND PRACTICE 2. (3 hours seminar, 6 hours studio time.) (Prerequisite: MUSR 670D1/D2 (formerly MUMT 670D1/D2).) (Students must register for both MUSR 671D1 and MUSR 671D2.) (No credit will be given for this course unless both MUSR 671D1 and MUSR 671D2 are successfully completed in consecutive terms.) Emphasis on multi-track recording theory and practice. The course will also concentrate on expanded multi-track procedures: signal processing, overdubbing, mixing, editing, and producing.

MUSR 672D1 (3), MUSR 672D2 (3) ANALYSIS OF RECORDINGS. (3 hours.) (Students must register for both MUSR 672D1 and MUSR 672D2.) (No credit will be given for this course unless both MUSR 672D1 and MUSR 672D2 are successfully completed in consecutive terms.) Theoretical and practical study of recording equipment, procedures and techniques. Recording sessions and live recording, using the recording studio, concert hall and portable equipment for on-location recording. Also included will be an introduction to the areas of radio drama, broadcast recording and radio commercials.

MUSR 674 ELECTRONIC AND ELECTROACOUSTIC MEASUREMENT. (3) (1 1/2 hours lecture, 1 1/2 hours laboratory) This course demonstrates the instruments, measurement procedures, and techniques used in a recording studio to determine the acoustical properties of a room and the transfer functions of devices used in a studio. Theoretical lectures on electronic test instrumentation and measurement methods are combined with practical application.

MUSR 674D1 (1.5), MUSR 674D2 (1.5) ELECTRONIC AND ELECTROACOUSTIC MEASUREMENT. (1 1/2 hours lecture, 1 1/2 hours laboratory) (Students must register for both MUSR 674D1 and MUSR 674D2.) (No credit will be given for this course unless both MUSR 674D1 and MUSR 674D2 are successfully completed in consecutive terms.) (MUSR 674D1 and MUSR 674D2 together are equivalent to MUSR 674.) This course demonstrates the instruments, measurement procedures, and techniques used in a recording studio to determine the acoustical properties of a room and the transfer functions of devices used in a studio. Theoretical lectures on electronic test instrumentation and measurement methods are combined with practical application.

MUSR 676 DIGITAL STUDIO TECHNOLOGY. (3) (3 hours lecture) Technical and operational characteristics of different digital recording systems currently employed by the recording industry.

MUSR 676 TOPICS: DIGITAL STUDIO TECHNOLOGY. (3) (1 hour tutorial, 3 hours studio time.) (Prerequisite: MUSR 676D1/D2.) Included in course are exercises for developing some of the following aural skills: identification and quantification of spatial parameters of sound image, nonlinear and transient distortion auditibility, identification of coherent and incoherent noise, sound source identification in complex textures, sound enhancement and reconstruction.

MUSR 676D1 (1.5), MUSR 676D2 (1.5) DIGITAL STUDIO TECHNOLOGY. (3 hours lecture) (Students must register for both MUSR 676D1 and MUSR 676D2.) (No credit will be given for this course unless both MUSR 676D1 and MUSR 676D2 are successfully completed in consecutive terms.) Theoretical and practical study of recording equipment, procedures and techniques. Recording sessions and live recording, using the recording studio, concert hall and portable equipment for on-location recording. Also included will be an introduction to the areas of radio drama, broadcast recording and radio commercials.

MUSR 677D1 (3), MUSR 677D2 (3) AUDIO FOR VIDEO POST-PRODUCTION. (3 hours seminar, 4 hours studio time.) (Students must register for both MUSR 677D1 and MUSR 677D2.) (No credit will be given for this course unless both MUSR 677D1 and MUSR 677D2 are successfully completed in consecutive terms.) Theoretical and practical study of recording equipment, procedures and techniques. Recording sessions and live recording, using the recording studio, concert hall and portable equipment for on-location recording. Also included will be an introduction to the areas of radio drama, broadcast recording and radio commercials.

MUSR 678 ADVANCED DIGITAL EDITING AND POST-PRODUCTION. (3) (3 hours.) (Prerequisite: MUSR 678 (formerly MUSR 678.) This course covers advanced concepts and techniques of audio post-production using digital workstations. Students will refine their skills in the assembly of raw material into a complete final product through editing, signal processing, mixing, sound restoration and pre-mastering.

MUSR 690 MEDIA THEORY AND PRACTICE SEMINAR 1. (3) (3 hours) Topics vary from year to year and are normally chosen according to the individual instructor's area of expertise. Topics to be covered may include the following: Media Technology, Digital Restoration of Archival Recordings, Communications Systems and Standards, Audio Aesthetics of Video Musicals, Classical Music and the Television Medium, etc.

MUSR 691 MEDIA THEORY AND PRACTICE SEMINAR 2. (3) (3 hours.) Topics vary from year to year and are normally chosen according to the individual instructor's area of expertise. Topics to be covered may include the following: Media Technology, Digital Restoration of Archival Recordings, Communications Systems and Standards, Audio Aesthetics of Video Musicals, Classical Music and the Television Medium, etc.

MUSR 692 MEDIA THEORY AND PRACTICE SEMINAR 3. (3) (3 hours.) Topics vary from year to year and are normally chosen according to the individual instructor's area of expertise. Topics to be covered may include the following: Media Technology, Digital Restoration of Archival Recordings, Communications Systems and Standards, Audio Aesthetics of Video Musicals, Classical Music and the Television Medium, etc.

MUSR 693 MEDIA THEORY AND PRACTICE SEMINAR 4. (3) (3 hours) Topics vary from year to year and are normally chosen according to the individual instructor's area of expertise. Topics to be covered may include the following: Media Technology, Digital Restoration of Archival Recordings, Communications Systems and Standards, Audio Aesthetics of Video Musicals, Classical Music and the Television Medium, etc.

MUSR 694 MEDIA THEORY AND PRACTICE SEMINAR 5. (3) (3 hours) Topics vary from year to year and are normally chosen according to the individual instructor's area of expertise. Topics to be covered may include the following: Media Technology, Digital Restoration of Archival Recordings, Communications Systems and Standards, Audio Aesthetics of Video Musicals, Classical Music and the Television Medium, etc.
be covered may include the following: Media Technology, Digital Restoration of Archival Recordings, Communications Systems and Standards, Audio Aesthetics of Video Musicals, Classical Music and the Television Medium, etc.

**MUSR 695 MEDIA THEORY AND PRACTICE SEMINAR 6.** (3) (3 hours) Topics vary from year to year and are normally chosen according to the individual instructor's area of expertise. Topics to be covered may include the following: Media Technology, Digital Restoration of Archival Recordings, Communications Systems and Standards, Audio Aesthetics of Video Musicals, Classical Music and the Television Medium, etc.

**MUTH 528 SCHENKERIAN TECHNIQUES.** (3) (3 hours) (Prerequisite: MUTH 310 or MUCO 240 OR Corequisite: MUTH 327 OR permission of instructor.) (Restriction: Limited enrolment with preference given to students in Honours Theory) Introduction to the principles and techniques of Schenkerian analysis. Interpretation and construction of reductive graphs through the analysis of a diversified repertoire of tonal works. Comparison with traditional methods of harmonic analysis (Rameau, Riemann, etc.).

**MUTH 529 PROSEMINAR IN MUSIC THEORY 1.** (3) (3 hours) (Prerequisites: MUTH 211 or MUCO 240 and MUSP 231) (Corequisites: MUTH 327 and MUHL 570 OR permission of instructor. Preference given to students in Honours Theory) A survey of various topics in contemporary music theory, including experimental aesthetics, indeterminacy, information theory, linguistics, microtonality, music technology, psycho-acoustics, and rhythmic theory.

**MUTH 538 MATHEMATICAL MODELS/MUSICAL ANALYSIS.** (3) (3 hours) (Prerequisites: MUTH 211 or MUCO 240 and MUSP 231 and MUSP 171) A survey of the theoretical and analytical writings from 1955 to the present, with emphasis on the following topics: a) atonal music (the works of Forte, Lewin, Rahn, Clough, Benjamin); b) twelve-tone music (Babbitt, Lewin, Mead); c) contour theory (Friedmann, West Marvin, Morris); and d) mathematical groups and transformational models (Lewin, Morris, Starr).

**MUHL 372 SOLO SONG OUTSIDE GERMANY AND AUSTRIA.** (3) (3 hours) (Prerequisites: MUHL 184 and MUHL 185 and MUTH 211 OR MUCO 240 and MUSP 231) Topics in American and European non-German song repertoire from the eighteenth century to the present. Issues discussed may include the role of song in national music culture, art song and folk song, national styles and poetic traditions, text-music relationships, and performance practice.

**MUHL 377 BAROQUE OPERA.** (3) (3 hours) (Prerequisites: MUHL 184 and MUHL 185 and MUTH 211 OR MUCO 240 and MUSP 231) History of opera from its origins in the musical, literary, and philosophical models available to the Florentine Camerata to the end of the baroque. The development of opera will be studied from the perspective of artistic style and in the light of historical, political, social, and economic conditions.

**MUHL 380 MEDIEVAL MUSIC.** (3) (3 hours) (Prerequisites: MUHL 184 and MUHL 185 and MUTH 211 OR MUCO 240 and MUSP 231) (Corequisites: MUTH 210 and MUSP 229) (Normally alternates with MUHL 381) The medieval style - an intensive study of one or more selected topics from the repertoire. Possible subjects include liturgical chant, Notre Dame, secular developments, and instrumental literature.

**MUHL 381 RENAISSANCE MUSIC.** (3) (3 hours) (Prerequisites: MUHL 184 and MUHL 185 and MUTH 211 OR MUCO 240 and MUSP 231) (Corequisites: MUTH 210 and MUSP 229) (Normally alternates with MUHL 380) Sacred and secular musical genres of the 15th and 16th Centuries. Various phases of imitative practice, cantus firmus and parody techniques. The emergence of homophonic textures in peripheral areas of the repertoire. Selected problems in the fields of theory, bibliography and aesthetics.

**MUHL 382 BAROQUE MUSIC.** (3) (3 hours) (Prerequisites: MUHL 184 and MUHL 185 and MUTH 211 OR MUCO 240 and MUSP 231) (Normally offered in alternate years) A detailed examination of several selected areas of Baroque music. Topics will be drawn from different geographical regions (e.g., Italy, France, Germany, etc.) and encompass church, chamber and theatre music, as well as performance practice. Each topic will be related to general musical developments of the period.

**MUHL 383 CLASSICAL MUSIC.** (3) (3 hours) (Prerequisites: MUHL 184 and MUHL 185 and MUTH 211 OR MUCO 240 and MUSP 231) (Normally offered in alternate years) The period covered will be from approximately 1740-1828, from the school of the Italian keyboard composers, opera buffa and seria, and composers centred at Mannheim, Paris, London, Berlin and Vienna, through the Viennese Classic period of Haydn, Mozart and Beethoven, to the death of Schubert.

**MUHL 384 ROMANTIC MUSIC.** (3) (3 hours) (Prerequisites: MUHL 184 and MUHL 185 and MUTH 211 OR MUCO 240 and MUSP 231) ( Normally offered in alternate years) The Romantic style as traced by an analysis of works by the major composers of Lied, symphony, symphonic poem, chamber music, and opera.

**MUHL 385 EARLY TWENTIETH-CENTURY MUSIC.** (3) (3 hours) (Prerequisites: MUHL 184 and MUHL 185 and MUTH 211 OR MUCO 240 and MUSP 231) Development of European, Russian, and American music from the 1890s until the early 1940s, tracing its roots in late 19th-century Romanticism and following its evolution in central Europe, France, and the United States. The music of major innovators such as Debussy, Stravinsky, Schoenberg, Ives, and Varèse will be discussed.

**MUHL 387 OPERA FROM MOZART TO PUCCINI.** (3) (3 hours) (Prerequisites: MUHL 184 and MUHL 185 and MUTH 211 OR MUCO 240 and MUSP 231) (Normally offered in alternate years) The period covered will be from approximately 1740-1828, from the school of the Italian keyboard composers, opera buffa and seria, and composers centred at Mannheim, Paris, London, Berlin and Vienna, through the Viennese Classic period of Haydn, Mozart and Beethoven, to the death of Schubert.

**MUHL 396 ERA OF THE MODERN PIANO.** (3) (3 hours) (Prerequisites: MUHL 184 and MUHL 185 and MUTH 211 OR MUCO 240 and MUSP 231) HISTORY OF THE TELES CVEN. 2009-2010 Graduate and Postdoctoral Studies, McGill University
Neo-Romanticism, serialism, the sonata in the 20th-century, North American composers.

MUHL 570 RESEARCH METHODS IN MUSIC. (3) (3 hours) (Prerequisites: MUHL 184 and MUHL 185 and MUTH 211 OR MUCO 240 and MUSP 231. Additional prerequisite: one MUHL or MUPP course at the 300 level or higher, or permission of instructor.) Survey and critical evaluation of research- and performance-related tools: composers' collected editions, monuments of music, bibliographies of music and music literature, discographies, directories, and databases. Topics will include: developing bibliographies, structuring written arguments, assessing academic and popular writings about music, and understanding the task of the music editor.

MUHL 591D1 (1.5), MUHL 591D2 (1.5) PALEOGRAPHY. (1 hour) (Prerequisites: MUHL 184 and MUHL 185 and MUTH 211 OR MUCO 240 and MUSP 231 (Restriction: U3 honours students in History). (Normally alternates with MUHL 529) (Students must register for both MUHL 591D1 and MUHL 591D2.) (No credit will be given for this course unless both MUHL 591D1 and MUHL 591D2 are successfully completed in consecutive terms) The theory and practice of musical transcription for the period 1100 to 1600. Black modal notation, Franconian notation, French and Italian Ars Nova notation, Mannernism, white mensural notation, proportions, and lute and keyboard tablatures will be studied.

MUHL 306 MUSIC AND AUDIO COMPUTING 1. (3) (3 hours) (Prerequisites: Previous digital audio and object-oriented programming experience) (Restriction(s): Open only to students in the Music Technology MST Minor or by permission of the instructor.) Concepts, algorithms, data structures, and programming techniques for the development of music and audio software, ranging from musical instrument design to interactive music performance systems.

MUHL 307 MUSIC AND AUDIO COMPUTING 2. (3) (3 hours) (Prerequisite: MUHL 306) (Restriction(s): Open only to students in the Music Technology MST Minor by permission of the instructor.) Theory and implementation of signal processing techniques for sound synthesis and audio effects processing using Matlab, C++, and Max/MSP.

MUPG 372D1 (1), MUPG 372D2 (1 CONTINUO. (1 hour) (Prerequisites: MUPG 272 AND permission of instructor. Enrolment limited to 4) (Students must register for both MUPG 372D1 and MUPG 372D2.) (No credit will be given for this course unless both MUPG 372D1 and MUPG 372D2 are successfully completed in consecutive terms) A study of 17th and 18th Century styles of figured-bass accompaniment as revealed in contemporary sources. The emphasis will be on the realization at the keyboard of representative works using original sources.

MUPP 381 TOPICS: PERFORMANCE PRACTICE BEFORE 1800. (3) (3 hours) (Restriction: Enrolment limited to 20. May not be taken by students who have had MUPP 381, MUPP 382, or MUPP 384, except by permission of instructor) Issues in performance practice of prenineteenth-century music. Topics may include rhythmic interpretation, voices and instruments in Medieval and Renaissance polyphony, ornamentation, improvisation, performance venues and context. Sources include original notation and modern editions, treatises, iconography, organology, analysis, criticism, and recordings.

MUTH 301 MODAL COUNTERPOINT 1. (3) (3 hours) (Prerequisites: MUTH 211 or MUCO 240 and MUSP 231 and MUSP 171) Polyphonic techniques of the Renaissance period studied through analysis of works by Palestina and others and through written exercises in two to three voices.

MUTH 302 MODAL COUNTERPOINT 2. (3) (3 hours) (Prerequisite: MUTH 301) Confrontation of Modal Counterpoint I. Study of more advanced techniques through further analysis and written exercises in three or more voices.

MUTH 303 TONAL COUNTERPOINT. (3) (3 hours) (Prerequisites: MUTH 211 or MUCO 240 and MUSP 231 and MUSP 171) The contrapuntal techniques of J.S. Bach studied through detailed technical analysis of his work and through written exercises in two to three parts.

MUTH 304 TONAL COUNTERPOINT 2. (3) (3 hours) (Prerequisite: MUTH 303) Confrontation of Tonal Counterpoint 1. Further analysis and written exercises in three to four parts with special emphasis on fugal techniques.

MUTH 310 MOD AND LATE 19TH-CENTURY THEORY AND ANALYSIS. (3) (Summer) (3 hours) (Prerequisites: MUTH 211 or MUCO 240 and MUSP 231 and MUSP 171) Expanded harmonic resources of the late 19th Century (e.g., foreign modulation, chromatic harmony). Analysis of characteristic small and large forms. Development of writing and analytical skills with a goal toward perceiving how levels of musical structure interact.

MUTH 311 20TH-CENTURY THEORY AND ANALYSIS. (3) (Summer) (3 hours) (Prerequisite: MUTH 310) Exploration of 20th-Century systems of pitch organization and attitudes toward counterpoint (e.g., polytonality, modal systems, neo-classical tonality, serialism, linear counterpoint, etc.). Examination of the relationship of these systems to earlier practices. Development of written and analytical skills for the purpose of gaining insight into 20th-Century principles and techniques.

MUTH 327D1 (2), MUTH 327D2 (2) 19TH-CENTURY ANALYSIS. (Students must register for both MUTH 327D1 and MUTH 327D2.) (No credit will be given for this course unless both MUTH 327D1 and MUTH 327D2 are successfully completed in consecutive terms) (MUTH 327D1 and MUTH 327D2 together are equivalent to MUTH 327) (Prerequisites: MUTH 211 or MUCO 240 and MUSP 231 and MUSP 171) The analysis of representative works of the 19th Century, selected from various genres of the period encompassed by late Beethoven, Schubert, and Berlioz to Mahler and Wolf. Some preliminary work in Schenkerian analysis will be undertaken.

MUTH 427D1 (2), MUTH 427D2 (2) 20TH-CENTURY ANALYSIS. (2) (3 hours) (Prerequisite: MUTH 327D1 and MUTH 327D2.) (No credit will be given for this course unless both MUTH 427D1 and MUTH 427D2 are successfully completed in consecutive terms) (Prerequisites: MUTH 211 or MUCO 240 and MUSP 231 and MUSP 171) Analysis of a cross-section of 20th Century music from Debussy and Mahler to the present to: 1) provide analytical tools necessary for the understanding of pitch organization, form, rhythm, timbre, etc., in individual works; 2) introduce salient theoretical approaches pertaining to 20th Century music.

MUTH 528 SCHENKERIAN TECHNIQUES. (3) (3 hours) (Prerequisite: MUTH 310 or MUCO 240 OR Corequisite: MUTH 327 OR permission of instructor.) (Restriction: Limited enrolment with preference given to students in Honours Theory) Introduction to the principles and techniques of Schenkerian analysis. Interpretation and construction of reductive graphs through the analysis of a diversified repertoire of tonal works. Comparison with traditional methods of harmonic analysis (Rameau, Riemann, etc.).

MUTH 529 PROSEQUINAR IN MUSIC THEORY 1. (3) (3 hours) (Prerequisites: MUTH 211 or MUCO 240 and MUSP 231 and MUSP 171) (Corequisites: MUTH 327 and MUHL 570 OR permission of instructor. Preference given to students in Honours Theory) A survey of various topics in contemporary music theory, including experimental aesthetics, indeterminacy, information theory, linguistics, microtonality, music technology, psycho-acoustics, and rhythmic theory.

MUTH 538 MATHEMATICAL MODELS/MUSICAL ANALYSIS. (3) (3 hours) (Prerequisites: MUTH 211 or MUCO 240 and MUSP 231 and MUSP 171) A survey of the theoretical and analytical writings from 1955 to the present, with emphasis on the following topics: a) atonal music (the works of Forte, Lewin, Rahn, Clough, Benjamin); b) twelve-tone music (Babbitt, Lewin, Mead); c) contour theory (Friedmann, West Marvin, Morris); and d) mathematical groups and transformational models (Lewin, Morris, Starr).
55 Natural Resource Sciences

Department of Natural Resource Sciences
McGill University, Macdonald Campus
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Telephone: 514-398-7890
Fax: 514-398-7990
Email: info.nrs@mcgill.ca
Website: www.mcgill.ca/nrs

55.1 Staff

Emeritus Professors
R. Knowles; B.Sc.(Birm.), Ph.D., D.Sc.(Lond.), F.R.S.C.; Microbiology
A.F. MacKenzie; B.S.A., M.Sc.(Sask.), Ph.D.(C’nell); Soil Science
R.A. MacLeod; B.A., M.A.(Br. Col.), Ph.D.(Wisc.), F.R.S.C.; Microbiology
P.H. Schuepp; Dipl.Sc.Nat.(Zür.), Ph.D.(Torr.); Agricultural Physics
R.K. Stewart; B.Sc.(Agr.), Ph.D.(Glas.); Entomology

Professors
D.M. Bird; B.Sc.(Guelph), M.Sc., Ph.D.(McG); Wildlife Biology
P. Brown; B.A.(Haver.), M.A., Ph.D.(Col.); Environmental Policy and Ethics (joint appt. with Geography and McGill School of Environment)
J.W. Fyles; B.Sc., M.Sc.(Vic. (BC)), Ph.D.(Alta.); Forest Resources (Tomlinson Chair in Forestry)
W.H. Hendershot; B.Sc.(Torr.), M.Sc.(McG.), Ph.D.(Br. Col.); Soil Science

Associate Professors
C. Buddle; B.Sc.(Guelph), Ph.D.(Alta.); Forest Insect Ecology
B. Côté; B.Sc., Ph.D.(Laval); Forest Resources
M.A. Curtis; B.Sc., M.Sc., Ph.D.(McG); Environmental Governance
B.T. Driscoll; B.Sc., Ph.D.(McM.); Microbiology
G.B. Dunphy; B.Sc.(New Br.), M.Sc., Ph.D.(Nfld.); Entomology
J.C. Henning; B.Sc., Ph.D.(Guelph); Agricultural Economics
M. Humphries; B.Sc.(Manit.), M.Sc.(Alta.), Ph.D.(McG); Wildlife Biology
D.J. Lewis; B.Sc., M.Sc., Ph.D.(Nfld.); Entomology
G.R. Mehuys; B.Sc., Ing.Agron.(Gembloux), Ph.D.(Calif.); Soil Science
D.F. Niven; B.Sc., Ph.D.(Aber.); Microbiology
M.E. Rau; B.Sc., Ph.D.(W. Ont.); Parastitology
I.B. Strachan; B.Sc.(Torr.), M.Sc., Ph.D.(Qu.); Micrometeorology
P.J. Thomassin; B.Sc.(McG.), M.S., Ph.D.(Hawaii Pac.); Agricultural and Environmental Economics
R.D. Titman; B.Sc.(McG.), M.Sc.(Bishop’s), Ph.D.(New Br.); Wildlife Biology
J. Whalen; B.Sc.(Agr.)(Dal.), M.Sc.(McG.), Ph.D.(Ohio St.); Soil Science
T.A. Wheeler; B.Sc.(Nfld.), M.Sc., Ph.D.(Guelph); Entomology
L.G. Whyte; B.Sc.(Regina), Ph.D.(Wat.); Microbiology

Assistant Professors
E. Bennett; B.A.(Oberline Coll.), M.S., Ph.D.(Wisc.); Ecosystem Ecology (joint appt. with McGill School of Environment)
G. Hickey; B.Sc.(Melb.), Ph.D.(Br. Col.), EMPA (ANZSOG, Monash); Sustainable Natural Resource Management
A. Naseem; B.Sc.(McG.), M.Sc., Ph.D.(Mich.); Agricultural Economics

Associate Members
C.A. Chapman (Anthropology), L.J. Chapman (Biology), D. Green (Redpath Museum), W.D. Marshall (Food Science and Agricultural Chemistry), M. Scott (Institute of Parasitology), D. Smith (Plant Science)

Adjunct Professors

55.2 Programs Offered

The Department of Natural Resource Sciences offers programs leading to M.Sc. and Ph.D. degrees in Entomology (includes Environmental and Neotropical Environment), Microbiology (includes Bioinformatics and Environment), Renewable Resources (includes Micrometeorology, Environment, Forest Science, Neotropical Environment, Soil Science and Wildlife Biology) and a M.Sc. degree in Agricultural Economics. It is also possible for students to pursue doctoral studies through the Department of Economics with Agricultural Economics as a field of specialization. A non-thesis option in Environmental Assessment (M.Sc. Ren. Res.) and an inter-disciplinary option in Bioinformatics for doctoral students are available.

The Department possesses, or has access to, excellent facilities for laboratory research and research in the field. Affiliated with the Department are the Lyman Entomological Museum and Research Laboratory, the Molson Nature Reserve, the Morgan Arboretum, the Avian Science and Conservation Centre, and the Ecomuseum of the St. Lawrence Valley Natural History Society.

55.3 Admission Requirements

M.Sc. Thesis (Agricultural Economics)
Direct admission to the M.Sc. requires the completion of a B.Sc. in Agricultural Economics or a closely related area, with the equivalent cumulative grade point average of 3.0/4.0 (second class-upper division) or 3.2/4.0 during the last two years of full-time university study. High grades are expected in courses considered by the academic unit to be preparatory to the graduate program.

The ideal preparation includes courses in agricultural economics, economic theory (intermediate micro and macro), calculus, linear algebra, and statistics. Students with deficiencies in these areas will be required to take additional courses as part of their degree program.

M.Sc. Thesis (Entomology, Microbiology, Renewable Resources)
Candidates are required to have a bachelor's degree with an equivalent cumulative grade point average of 3.0/4.0 (second class-upper division) or 3.2/4.0 during the last two years of full-time university study. High grades are expected in courses considered by the academic unit to be preparatory to the graduate program. Applicants should also have at least one year of professional experience in environmental assessment or a similar field.

M.Sc. in Renewable Resources (Non-Thesis) – Environmental Assessment Option
Candidates are required to have a bachelor's degree in a relevant subject, with an equivalent cumulative grade point average of 3.0/4.0 (second class-upper division) or 3.2/4.0 during the last two years of full-time university study. High grades are expected in courses considered by the academic unit to be preparatory to the graduate program. Applicants should also have at least one year of professional experience in environmental assessment or a similar field.

Ph.D. Thesis (Entomology, Microbiology, Renewable Resources)
Candidates, normally, are required to hold a M.Sc. degree and will be judged primarily on their ability to conduct an original and independent research study.
55.4 Application Procedures

(For all programs excluding the Environmental Assessment Option.)

Applicants for graduate studies must forward supporting documents to:

Department of Natural Resource Sciences (Graduate Student Office)
McGill University, Macdonald Campus
21,111 Lakeshore Road
Sainte-Anne-de-Bellevue, QC H9X 3V9
Canada

Telephone: 514-398-7941
Fax: 514-398-7990
Email: marie.kubecki@mcgill.ca

Applications will be considered upon receipt of a signed and completed application form, $100 application fee, and the following supporting documents:

Transcripts – Two official copies of all university-level transcripts with proof of degree(s) granted are required for admission. Transcripts written in a language other than English or French must be accompanied by a certified translation. An explanation of the grading system used by the applicant's university is essential. It is the applicant's responsibility to arrange for transcripts to be sent.

It is desirable to submit a list of the titles of courses taken in the major subject, since transcripts often give course numbers only. Applicants must be graduates of a university of recognized reputation and hold a bachelor's degree equivalent to a McGill Honours degree in a subject closely related to the one selected for graduate work. This implies that about one-third of all undergraduate courses should have been devoted to the subject itself and another third to cognate subjects.

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

Competency in English – Non-Canadian applicants whose mother tongue is not English, who did not graduate from a Canadian institution (anglophone or francophone) and who have not completed an undergraduate degree using the English language are required to submit documented proof of competency in oral and written English, by appropriate exams, e.g., TOEFL (minimum score 550 on the paper-based test, 213 on the computer-based test or 86 on the internet-based test with each component score not less than 20) or IELTS (minimum overall band 6.5). The MCHE is not considered equivalent. Results must be submitted as part of the application. The University code is 0935 (McGill University, Montreal); please use Department code 31 (Graduate Schools), Biological Sciences - Agriculture, to ensure that your TOEFL reaches this office without delay.

For entrance into the master’s program in Agricultural Economics the following test scores are required: TOEFL (minimum score 570 on the paper-based test, 230 on the computer-based test or 88 on the internet-based test with each component score not less than 20) or IELTS (minimum 7 overall band).

Graduate Record Exam (GRE) – The GRE is not required, but it is highly recommended.

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

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

Qualifying Students – Some applicants whose academic degrees and standing entitle them to serious consideration for admission to graduate studies, but who are considered inadequately prepared in the subject selected may be admitted to a Qualifying Program if they have met the Graduate and Postdoctoral Studies minimum CGPA of 3.0/4.0. The course(s) to be taken in a Qualifying Program will be prescribed by the academic unit concerned. Qualifying students are registered in graduate studies, but not as candidates for a degree. Only one qualifying year is permitted. Successful completion of a qualifying program does not guarantee admission to a degree program.

Application Procedures for Environmental Assessment Option (Non-Thesis) – Applicants for graduate studies in the Non-Thesis Environmental Assessment option must forward supporting documents to:

Department of Natural Resource Sciences (Environmental Assessment Office MS2-082)
McGill University, Macdonald Campus
21,111 Lakeshore Road
Sainte-Anne-de-Bellevue, QC H9X 3V9
Canada

Telephone: 514-398-7901
Fax: 514-398-7990
Email: robert.oxley@mcgill.ca

Applications will be considered upon receipt of:
1. a signed and completed application form and $100 application fee;
2. two official copies of all university-level transcripts with proof of degree(s) granted. Transcripts written in a language other than English or French must be accompanied by a certified translation. An explanation of the grading system used by the applicant’s university is essential. If transcripts contain course numbers only, please submit a list of the titles of courses taken in the major subject;
3. two letters of recommendation on letterhead (official paper) of originating institution or bearing the university seal and with original signatures from two instructors familiar with the applicant's work, preferably in the applicant's area of specialization. If the degree was awarded more than five years ago, letters of recommendation can be written by employers rather than professors;
4. a curriculum vitae;
5. letter of intent outlining the applicant's reasons for wishing to pursue the program of study.

It is the applicant's responsibility to arrange for the following documents to be sent:

DOCUMENTS SUBMITTED WILL NOT BE RETURNED.

Competency in English – Non-Canadian applicants whose mother tongue is not English, who did not graduate from a Canadian institution (anglophone or francophone) and who have not completed an undergraduate degree using the English language are required to submit documented proof of competency in oral and written English, by appropriate exams, e.g., TOEFL (minimum score 570 on the paper-based test, 230 on the computer-based test or 88 on the internet-based test with each component score not less than 20) or IELTS (minimum 7 overall band). The MCHE is not considered equivalent. Results must be submitted as part of the application. The University code is 0935 (McGill University, Montreal); please use Department code 31 (Graduate Studies) in the application. The University code is 0935 (McGill University, Montreal); please use Department code 31 (Graduate Studies) in the application. The University code is 0935 (McGill University, Montreal); please use Department code 31 (Graduate Studies) in the application. The University code is 0935 (McGill University, Montreal); please use Department code 31 (Graduate Studies) in the application.

Application Fee (non-refundable) – A fee of $100 Canadian must accompany each application (including McGill students), otherwise it cannot be considered. This sum must be remitted using one of the following methods:

1. Credit card (by completing the appropriate section of the application form). N.B.: online applications must be paid for by credit card.
2. Certified cheque in CAD$ drawn on a Canadian bank.
4. Canadian Money order in CAD$.
5. U.S. Money Order in USD$.
6. An international draft in Canadian funds drawn on a Canadian bank requested from the applicant's bank in his/her own country.

Dates for Guaranteed Consideration
For dates for guaranteed consideration, please consult the following website: www.mcgill.ca/gradapplicants/programs. Then select the appropriate program. It may be necessary to delay review of the applicant's file until the following admittance period if application materials including supporting documents are received after the dates for guaranteed consideration. Applicants are encouraged to make use of the online application form available on the web at www.mcgill.ca/gradapplicants/apply.

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

55.5 Program Requirements

M.Sc. in Agricultural Economics (Thesis) (46 credits)

Students may specialize, by way of their research program, in agriculture, development, finance, marketing and trade, policy, and resource and ecological economics.

Required Courses (7 credits)

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<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>AGEC 690</td>
<td>Seminar</td>
<td>1</td>
</tr>
</tbody>
</table>

Complementary Courses (18 credits)

6 credits, two theory courses chosen from:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGEC 611</td>
<td>Price Analysis</td>
<td>3</td>
</tr>
<tr>
<td>AGEC 633</td>
<td>Environmental and Natural Resource Economics</td>
<td>3</td>
</tr>
<tr>
<td>ECON 610</td>
<td>Microeconomic Theory 1</td>
<td>3</td>
</tr>
<tr>
<td>ECON 611</td>
<td>Microeconomic Theory 2</td>
<td>3</td>
</tr>
<tr>
<td>ECON 620</td>
<td>Macroeconomic Theory 1</td>
<td>3</td>
</tr>
<tr>
<td>ECON 621</td>
<td>Macroeconomic Theory 2</td>
<td>3</td>
</tr>
<tr>
<td>ECON 662</td>
<td>Econometrics</td>
<td>6</td>
</tr>
<tr>
<td>ECON 665</td>
<td>Quantitative Methods</td>
<td>3</td>
</tr>
<tr>
<td>MGSC 634</td>
<td>Econometric Methods in Management</td>
<td>3</td>
</tr>
<tr>
<td>MGSC 679</td>
<td>Applied Deterministic Optimization</td>
<td>3</td>
</tr>
</tbody>
</table>

9 credits, three 3-credit graduate-level courses – at least one of which must be in Agricultural Economics, chosen in consultation with the Agricultural Economics Advisor.

Thesis Component – Required (27 credits)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGEC 691</td>
<td>M.Sc. Thesis 1</td>
<td>6</td>
</tr>
<tr>
<td>AGEC 692</td>
<td>M.Sc. Thesis 2</td>
<td>3</td>
</tr>
<tr>
<td>AGEC 693</td>
<td>M.Sc. Thesis 3</td>
<td>3</td>
</tr>
<tr>
<td>AGEC 694</td>
<td>M.Sc. Thesis 4</td>
<td>6</td>
</tr>
<tr>
<td>AGEC 695</td>
<td>M.Sc. Thesis 5</td>
<td>6</td>
</tr>
</tbody>
</table>

M.Sc. in Entomology (Thesis) (45 credits)

Required Courses (3 credits)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NRSC 643</td>
<td>Graduate Seminar 1</td>
<td>1</td>
</tr>
<tr>
<td>NRSC 644</td>
<td>Graduate Seminar 2</td>
<td>1</td>
</tr>
<tr>
<td>NRSC 651</td>
<td>Graduate Seminar 3</td>
<td>1</td>
</tr>
</tbody>
</table>

Complementary Courses (6 credits)

Two 3-credit courses at the 500 level or higher; normally one of these will be a course in statistics.

Thesis (36 credits)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>NRSC 691</td>
<td>M.Sc. Thesis Research 1</td>
<td>12</td>
</tr>
<tr>
<td>NRSC 692</td>
<td>M.Sc. Thesis Research 2</td>
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</tr>
<tr>
<td>NRSC 693</td>
<td>M.Sc. Thesis Research 3</td>
<td>12</td>
</tr>
</tbody>
</table>

M.Sc. in Entomology (Thesis) – Environment Option/Concentration (46 credits)

Required Courses (7 credits)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENVR 610</td>
<td>Foundations of Environmental Policy</td>
<td>3</td>
</tr>
<tr>
<td>ENVR 650</td>
<td>Environmental Seminar 1</td>
<td>1</td>
</tr>
<tr>
<td>ENVR 651</td>
<td>Environmental Seminar 2</td>
<td>1</td>
</tr>
<tr>
<td>ENVR 652</td>
<td>Environmental Seminar 3</td>
<td>1</td>
</tr>
<tr>
<td>NRSC 651</td>
<td>Graduate Seminar 3</td>
<td>1</td>
</tr>
</tbody>
</table>

Complementary Courses (3 credits)

3 credits, one of the following courses:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENVR 519</td>
<td>Global Environmental Politics</td>
<td>3</td>
</tr>
<tr>
<td>ENVR 544</td>
<td>Environmental Measurement and Modelling</td>
<td>3</td>
</tr>
<tr>
<td>ENVR 580</td>
<td>Topics in Environment 3</td>
<td>3</td>
</tr>
<tr>
<td>ENVR 611</td>
<td>The Economy of Nature</td>
<td>3</td>
</tr>
<tr>
<td>ENVR 620</td>
<td>Environment and Health of Species</td>
<td>3</td>
</tr>
<tr>
<td>ENVR 622</td>
<td>Sustainable Landscapes</td>
<td>3</td>
</tr>
<tr>
<td>ENVR 630</td>
<td>Civilization and Environment 1</td>
<td>3</td>
</tr>
<tr>
<td>ENVR 680</td>
<td>Topics in Environment 4</td>
<td>3</td>
</tr>
</tbody>
</table>

or other graduate course recommended by the advisory committee and approved by the Environment Option Committee.

Thesis Component – Required (36 credits)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NRSC 691</td>
<td>M.Sc. Thesis Research 1</td>
<td>12</td>
</tr>
<tr>
<td>NRSC 692</td>
<td>M.Sc. Thesis Research 2</td>
<td>12</td>
</tr>
<tr>
<td>NRSC 693</td>
<td>M.Sc. Thesis Research 3</td>
<td>12</td>
</tr>
</tbody>
</table>

M.Sc. in Entomology (Thesis) – Neotropical Environment Option/Concentration (48 credits)

Required Courses (9 credits)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 640</td>
<td>Tropical Biology and Conservation</td>
<td>3</td>
</tr>
<tr>
<td>ENVR 610</td>
<td>Foundations of Environmental Policy</td>
<td>3</td>
</tr>
<tr>
<td>NRSC 643</td>
<td>Graduate Seminar 1</td>
<td>1</td>
</tr>
<tr>
<td>NRSC 644</td>
<td>Graduate Seminar 2</td>
<td>1</td>
</tr>
<tr>
<td>NRSC 651</td>
<td>Graduate Seminar 3</td>
<td>1</td>
</tr>
</tbody>
</table>
Complementary Course (3 credits)
3 credits, one of the following courses:
AGRI 550 (3) Sustained Tropical Agriculture
BIOL 553 (3) Neotropical Environments
BIOL 641 (3) Issues in Tropical Biology
ENVR 611 (3) The Economy of Nature
ENVR 612 (3) Tropical Environmental Issues
ENVR 680 (3) Topics in Environment 4
POLI 644 (3) Tropical Environmental Politics
SOCI 565 (3) Social Change in Panama

Thesis (36 credits)
NRSC 691 (12) M.Sc. Thesis Research 1
NRSC 692 (12) M.Sc. Thesis Research 2
NRSC 693 (12) M.Sc. Thesis Research 3
Participation in the MSE-Panama Symposium presentation in Montreal is also required.

M.Sc. in Microbiology (Thesis) (45 credits)
Required Courses (3 credits)
NRSC 643 (1) Graduate Seminar 1
NRSC 644 (1) Graduate Seminar 2
NRSC 651 (1) Graduate Seminar 3

Complementary Courses (6 credits)
Two 3-credit courses at the 500 level or higher; normally one of these will be a course in statistics.

Thesis (36 credits)
NRSC 691 (12) M.Sc. Thesis Research 1
NRSC 692 (12) M.Sc. Thesis Research 2
NRSC 693 (12) M.Sc. Thesis Research 3

M.Sc. in Microbiology (Thesis) – Environment Option/Concentration (46 credits)
Required Courses (7 credits)
ENVR 610 (3) Foundations of Environmental Policy
ENVR 650 (1) Environmental Seminar 1
ENVR 651 (1) Environmental Seminar 2
ENVR 652 (1) Environmental Seminar 3
NRSC 651 (1) Graduate Seminar 3

Complementary Courses (3 credits)
3 credits, one of the following courses:
ENVR 519 (3) Global Environmental Politics
ENVR 544 (3) Environmental Measurement and Modelling
ENVR 580 (3) Topics in Environment 3
ENVR 611 (3) The Economy of Nature
ENVR 620 (3) Environment and Health of Species
ENVR 622 (3) Sustainable Landscapes
ENVR 630 (3) Civilization and Environment 1
ENVR 680 (3) Topics in Environment 4
or other graduate course recommended by the advisory committee and approved by the Environment Option Committee

3 credits of statistics at the graduate level

Thesis Component – Required (33 credits)
NRSC 691 (12) M.Sc. Thesis Research 1
NRSC 692 (12) M.Sc. Thesis Research 2
NRSC 694 (9) M.Sc. Thesis Research 4

M.Sc. in Renewable Resources (Thesis) – Neotropical Environment Option/Concentration (48 credits)
Required Courses (9 credits)
BIOL 640 (3) Tropical Biology and Conservation
ENVR 610 (3) Foundations of Environmental Policy
NRSC 643 (1) Graduate Seminar 1
NRSC 644 (1) Graduate Seminar 2
NRSC 651 (1) Graduate Seminar 3

Complementary Course (3 credits)
3 credits, one of the following courses:
AGRI 550 (3) Sustained Tropical Agriculture
BIOL 553 (3) Neotropical Environments
BIOL 641 (3) Issues in Tropical Biology
ENVR 611 (3) The Economy of Nature
ENVR 612 (3) Tropical Environmental Issues
POLI 644 (3) Tropical Environmental Politics
SOCI 565 (3) Social Change in Panama

Thesis (36 credits)
NRSC 691 (12) M.Sc. Thesis Research 1
NRSC 692 (12) M.Sc. Thesis Research 2
NRSC 693 (12) M.Sc. Thesis Research 3
Participation in the MSE-Panama Symposium presentation in Montreal is also required.
### M.Sc. in Renewable Resources (Non-Thesis) – Environmental Assessment Option/Concentration (45 credits)

**Required Courses** (21 credits)
- NRSC 610 (3) Advanced Environmental Assessment
- NRSC 611 (3) Environmental Assessment Knowledge Base
- NRSC 612 (3) Environmental Assessment and Sustainable Development
- NRSC 613 (3) Strategic and Sectoral Environmental Assessment
- NRSC 614 (3) Meeting Environmental Assessment Regulations
- NRSC 617 (6) Environmental Assessment: Institutional Approaches

**Required Internship** (15 credits)
- NRSC 615 (15) Environmental Assessment Internship

**Required Project** (9 credits)
- NRSC 616 (9) Environmental Assessment Project Paper

**Ph.D. in Entomology, Microbiology, or Renewable Resources (which includes Micrometeorology, Forest Science, Soil Science and Wildlife Biology)**

#### Required Courses
- NRSC 751 (0) Graduate Seminar 4
- NRSC 752 (0) Graduate Seminar 5
- NRSC 753 (0) Graduate Seminar 6
- NRSC 754 (0) Graduate Seminar 7

**Coursework**
Course requirements are specified by the staff in the discipline but are flexible and depend largely on the student’s background, immediate interests, and ultimate objectives.

**Ph.D. Comprehensive – Required** (0 credits)
- NRSC 701 (0) Ph.D. Comprehensive Examination

**Thesis**
Presentation and subsequent defence of a satisfactory thesis based on the student’s research.

### Ph.D. in Entomology – Environment Option/Concentration

#### Required Courses
- ENV 610 (3) Foundations of Environmental Policy
- ENV 650 (1) Environmental Seminar 1
- ENV 651 (1) Environmental Seminar 2
- ENV 652 (1) Environmental Seminar 3
- NRSC 754 (0) Graduate Seminar 7

**Coursework**
Course requirements are specified by the staff in the discipline but are flexible and depend largely on the student’s background, immediate interests, and ultimate objectives.

**Complementary Courses** (3 credits)
- One course chosen from:
  - ENV 519 (3) Global Environmental Politics
  - ENV 544 (3) Environmental Measurement and Modelling
  - ENV 580 (3) Topics in Environment 3
  - ENV 611 (3) The Economy of Nature
  - ENV 620 (3) Environment and Health of Species
  - ENV 622 (3) Sustainable Landscapes
  - ENV 630 (3) Civilization and Environment 1
  - ENV 680 (3) Topics in Environment 4
  - or other graduate course recommended by the advisory committee and approved by the Environment Option Committee

**Ph.D. Comprehensive – Required** (0 credits)
- NRSC 701 (0) Ph.D. Comprehensive Examination

**Thesis**
Presentation and subsequent defence of a satisfactory thesis based on the student’s research.

### Ph.D. in Entomology – Neotropical Environment Option/Concentration

#### Required Courses (6 credits)
- BIOL 640 (3) Tropical Biology and Conservation
- ENVR 610 (3) Foundations of Environmental Policy
- NRSC 751 (0) Graduate Seminar 4
- NRSC 752 (0) Graduate Seminar 5
- NRSC 753 (0) Graduate Seminar 6
- NRSC 754 (0) Graduate Seminar 7

**Complementary Course** (3 credits)
- 3 credits, one of the following courses:
  - AGRI 550 (3) Sustained Tropical Agriculture
  - BIOL 553 (3) Neotropical Environments
  - BIOL 641 (3) Issues in Tropical Biology
  - ENVR 611 (3) The Economy of Nature
  - ENVR 612 (3) Tropical Environmental Issues
  - ENVR 680 (3) Topics in Environment 4
  - POLI 644 (3) Tropical Environmental Politics
  - SOCI 565 (3) Social Change in Panama

**Ph.D. Comprehensive – Required** (0 credits)
- NRSC 701 (0) Ph.D. Comprehensive Examination

Participation in the MSE-Panama Symposium presentation in Montreal is also required.

**Thesis**
Presentation and subsequent defence of a satisfactory thesis based on the student’s research.

### Ph.D. in Microbiology – Bioinformatics Option/Concentration

#### Required Courses (3 credits)
- COMP 616 (3) Bioinformatics Seminar
- NRSC 751 (0) Graduate Seminar 4
- NRSC 752 (0) Graduate Seminar 5
- NRSC 753 (0) Graduate Seminar 6
- NRSC 754 (0) Graduate Seminar 7

**Complementary Courses** (6 credits)
- 6 credits from the following courses:
  - BINF 621 (3) Bioinformatics: Molecular Biology
  - BMDE 652 (3) Bioinformatics: Proteomics
  - BTEC 555 (3) Structural Bioinformatics
  - COMP 618 (3) Bioinformatics: Functional Genomics
  - PHGY 603 (3) Systems Biology and Biophysics

Additional courses at the 500, 600, or 700 level may be required at the discretion of the candidate’s supervisory committee.

**Ph.D. Comprehensive – Required** (0 credits)
- NRSC 701 (0) Ph.D. Comprehensive Examination

**Thesis**
Presentation and subsequent defence of a satisfactory thesis based on the student’s research.

### Ph.D. in Microbiology – Environment Option/Concentration

#### Required Courses (6 credits)
- ENV 610 (3) Foundations of Environmental Policy
- ENVR 650 (1) Environmental Seminar 1
- ENVR 651 (1) Environmental Seminar 2
- ENVR 652 (1) Environmental Seminar 3
- NRSC 754 (0) Graduate Seminar 7

**Coursework**
Course requirements are specified by the staff in the discipline but are flexible and depend largely on the student’s background, immediate interests, and ultimate objectives.
Ph.D. Comprehensive – Required (0 credits)
NRSC 701 (0) Ph.D. Comprehensive Examination

Thesis
Presentation and subsequent defence of a satisfactory thesis based on the student’s research.

55.6 Courses

Students preparing to register should consult Class Schedule on the web at www.mcgill.ca/student-records/register/class-schedule for the most up-to-date list of courses available; courses may have been added, rescheduled or cancelled after this Calendar was published. Class Schedule lists courses by term and includes days, times, locations, and names of instructors.

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

★ Denotes courses taught only in alternate years.

AGEC 611 Price Analysis. (3) Topics in advanced microeconomic theory with applications in agricultural economics.

AGEC 630 Food and Agricultural Policy. (3) This course examines the role of government in the agriculture and food industry through the nature and causes of the problems addressed, the instruments and institutions by which policy is implemented and the effects of different policies. Emphasis is placed on the application of economic models to analyze policy problems.

★ AGEC 633 Environmental and Natural Resource Economics. (3) An advanced course in the theory and problems of environmental and resource economics and in the analytical techniques used to assess environmental and resource use issues.

AGEC 642 Economics of Agricultural Development. (3) This course focuses on the role of agriculture in economic development. Topics covered will be - development theories, economic efficiency, employment, technology adoption and structural change in developing countries. Also, agriculture, food and development policies and implications for long term planning will be discussed.

AGEC 685 Selected Topics in Agricultural Economics. (3) This course is designed to permit students to explore agricultural economics topics that are not covered in other courses. Students may be asked to prepare a presentation or lead discussion on the selected topic for the benefit of other students and staff. (Pass/Fail grading.)

AGEC 690 Seminar. (1) This course will focus on current research on economic problems of agriculture through presentations by staff, students and special guests. All graduate students are required to register for this course, and make at least one major presentation.

AGEC 691 M.Sc. Thesis 1. (6)
AGEC 692 M.Sc. Thesis 2. (3)
AGEC 693 M.Sc. Thesis 3. (6)
AGEC 694 M.Sc. Thesis 4. (6)
AGEC 695 M.Sc. Thesis 5. (6)

★ ENTO 515 Parasitoid Behavioural Ecology. (3) (Winter) (Prerequisite: ENTO 330 (formerly NRSC 330) or equivalent) (Restriction: Not open to students who have taken NRSC 515) The origin and diversity of parasitoid species will be presented. Aspects of behavioural ecology that pertain to host selection, optimal allocation of progeny and sex and host-parasitoid interactions are examined. The importance of these processes is discussed in a biological control perspective.
ENTO 520 Insect Physiology. (3) (Winter) (Prerequisite: Permission of instructor) (Restriction: Not open to students who have taken NRSC 520) Organismal approach to insects, emphasizing the physiology and development, and the physiological relations of insects to their environment.

★ ENTO 535 Aquatic Entomology. (3) (Winter) Diversity, biology, ecology and recognition of the main groups of aquatic insects.

ENTO 550 Veterinary and Medical Entomology. (3) (Winter) (Prerequisite: Permission of instructor) (Restriction: Not open to students who have taken NRSC 550) Environmental aspects of veterinary and medical entomology. An advanced course dealing with the biology and ecology of insects and acarines as aetiological agents and vectors of disease, and their control. Integrated approaches to problem solving.

ENTO 600 Insect Pathology. (3) A detailed study of the interaction between insects and their pathogens (viruses, bacteria, fungi and nematodes). Emphasis is divided equally between the identification and reactions of anti-pathogen systems in insects and the microbiology (particularly virulence mechanisms) of the pathogens. Students must have a general microbiology course and courses in biochemistry and insect physiology.

★ ENTO 615 Forest Entomology. (3) (Winter) (Prerequisite: Permission of the instructor) Current topics in forest entomology.

MICR 772 Advanced Microbial Genetics. (3) (Restriction: Not open to students who have successfully completed NRSC 772) Topics in bacterial archaea, eukaryal, and bacteriophage genetics.

MICR 773 Advanced Microbial Physiology. (3) (Restriction: Not open to students who have successfully completed NRSC 773) Topics in microbiological metabolism, ranging from current to classic, from biochemical to genetic aspects.

★ NRSC 510 Agricultural Micrometeorology. (3) (Fall) (3 lectures) (Restriction: Not open to students who have taken AEPH 510) Interaction between plant communities and the atmosphere. The physical processes governing the transfer of heat, mass and momentum as they relate to research and production in agricultural and environmental systems. Experimental techniques for measuring fluxes of heat, water-vapour, CO₂ and natural and man-made pollutants.

NRSC 512 Water: Ethics, Law and Policy. (3) (Fall) The various legal expressions of the relationship between humanity and water such as those grounded in markets, basic rights, First Nations traditions, utilitarianism and cost/benefit analysis. Public, private and international law, and intergovernmental institutions relevant to the protection and management of water resources.

NRSC 514 Freshwater Ecosystems. (3) (Fall) Origin, diversity, structure, function and evolution of freshwater ecosystems; fauna, flora and biotic communities of freshwater habitats; indicator organisms; biotic indices; human impact on freshwater ecosystems.

★ NRSC 540 Socio-Cultural Issues in Water. (3) (Winter) (Prerequisite: A 300- or 400-level course in water or permission of instructor) (3-hour seminar) Discussion of current debates and problems related to water, especially in developing countries. Topics include: gender relations and health in the context of cultural and economic systems, and the impacts of new technologies, market structures and population growth.

NRSC 610 Advanced Environmental Assessment. (3) (Restriction: Limited to students enrolled in the Non-Thesis Master’s in Environmental Assessment Program, or by permission of program coordinator) A detailed account of the evolution of environmental assessment related concepts, processes, procedures and best practices in Canada and internationally.

NRSC 611 Environmental Assessment Knowledge Base. (3) (Restriction: Limited to students enrolled in the Non-Thesis Master’s in Environmental Assessment Program, or by permission of program coordinator) A thorough explanation of the fundamental knowledge bases for accountability and best practice in environmental and integrated assessment.

NRSC 612 Environmental Assessment and Sustainable Development. (3) (Restriction: Limited to students enrolled in the Non-Thesis Master’s in Environmental Assessment Program, or by permission of program coordinator) A detailed consideration of environmental assessment as a tool for sustainable development.

NRSC 613 Strategic and Sectoral Environmental Assessment. (3) (Restriction: Limited to students enrolled in the Non-Thesis Master’s in Environmental Assessment Program, or by permission of program coordinator) A detailed account of strategic environmental assessment and sector-specific environmental assessment with special focus on key economic sectors.

NRSC 614 Meeting Environmental Assessment Regulations. (3) (Restriction: Limited to students enrolled in the Non-Thesis Master’s in Environmental Assessment Program, or by permission of program coordinator) Meeting environmental assessment regulatory requirements through advanced planning and efficient management of the assessment and follow-up phases of the EA process.

NRSC 615 Environmental Assessment Internship. (15) (Restriction: Limited to students enrolled in the Non-Thesis Master’s in Environmental Assessment Program) Placement in a government, academic or private sector agency for 15 weeks of full-time work on an EA project (35 hours per week).

NRSC 616 Environmental Assessment Project Paper. (9) (Restriction: Limited to students enrolled in the Non-Thesis Master’s in Environmental Assessment Program) Written report describing the approach to and resolution of the environmental assessment issue addressed during the internship in Environmental Assessment.

NRSC 617 Environmental Assessment: Institutional Approaches. (6) (Restriction: Limited to students enrolled in the Non-Thesis Master’s in Environmental Assessment Program) Weekly one-day visits and on-site colloquia throughout the term at environmental assessment agencies and organizations in the Montreal and Ottawa region with expertise in environmental assessment.

NRSC 643 Graduate Seminar 1. (1) (Section 001 Agrometeorology, Forest Science and Soil Science students) (Section 002 Entomology and Wildlife Biology students) (Section 003 Microbiology students) Open to students in the M.Sc. Program. Presentation on a selected topic, research proposal, or research results based on progress towards the M.Sc. degree.

NRSC 644 Graduate Seminar 2. (1) (Section 001 Agrometeorology, Forest Science and Soil Science students) (Section 002 Entomology and Wildlife Biology students) (Section 003 Microbiology students) Open to students in the M.Sc. Program. Presentation on a selected topic, research proposal, or research results based on progress towards the M.Sc. degree.

NRSC 651 Graduate Seminar 3. (1) (Section 001 Agrometeorology, Forest Science and Soil Science students) (Section 002 Entomology and Wildlife Biology students) (Section 003 Microbiology students) Open to students in the M.Sc. Program. Presentation of an M.Sc. student’s final thesis results.

NRSC 680 Special Topics 1. (1) Students pursue topics not otherwise available in formal courses, under staff supervision.

NRSC 682 Special Topics 2. (2) Students pursue topics not otherwise available in formal courses, under staff supervision.

NRSC 684 Special Topics 5. (3) Students pursue topics not otherwise available in formal courses, under staff supervision.

NRSC 685 Special Topics 6. (3) Students pursue topics not otherwise available in formal courses, under staff supervision.
NRSC 691 M.Sc. Thesis Research 1. (12) Independent research under the direction of a supervisor towards the completion of the M.Sc. degree.

NRSC 692 M.Sc. Thesis Research 2. (12) Independent research under the direction of a supervisor towards the completion of the M.Sc. degree.


NRSC 694 M.Sc. Thesis Research 4. (9) Independent research under the direction of a supervisor towards the completion of the M.Sc. degree.

NRSC 701 Ph.D. Comprehensive Examination. (0)

NRSC 751 Graduate Seminar 4. (0) (Restriction: Open to students in the Ph.D. Program) (Section 001 Agronomy, Forest Science and Soil Science students) (Section 002 Entomology and Wildlife Biology students) (Section 003 Microbiology students) Presentation on a selected topic, research proposal or research results based on progress in the Ph.D. degree.

NRSC 752 Graduate Seminar 5. (0) (Restriction: Open to students in the Ph.D. Program) (Section 001 Agronomy, Forest Science and Soil Science students) (Section 002 Entomology and Wildlife Biology students) (Section 003 Microbiology students) Presentation on a selected topic, research proposal or research results based on progress in the Ph.D. degree.

NRSC 753 Graduate Seminar 6. (0) (Restriction: Open to students in the Ph.D. Program) (Section 001 Agronomy, Forest Science and Soil Science students) (Section 002 Entomology and Wildlife Biology students) (Section 003 Microbiology students) Presentation on a selected topic, research proposal or research results based on progress in the Ph.D. degree.

NRSC 754 Graduate Seminar 7. (0) (Restriction: Open to students in the Ph.D. Program) (Section 001 Agronomy, Forest Science and Soil Science students) (Section 002 Entomology and Wildlife Biology students) (Section 003 Microbiology students) Presentation on a selected topic, research proposal or research results based on progress in the Ph.D. degree.

SOIL 521 Soil Microbiology and Biochemistry. (3) (Winter) (Restriction: Open to students who have taken NRSC 521) Soil environments, soil microorganisms and their function in the biogeochemical cycles of C, N, P and S. Basics of soil bioremediation.

SOIL 602 Advanced Soil Ecology 1. (3) Discussion of significant research in soil ecology including transformations of soil organic matter and nutrients, ecological and pedological functions of soil organisms, soil food webs, plant-soil biota interactions, and analytical techniques for monitoring soil organisms.

SOIL 603 Advanced Soil Ecology 2. (3) Discussion of significant research in soil ecology including the occurrence and activity of soil organisms, methods of monitoring and manipulating soil biota for soil fertility management, and human impacts on soil biota at different scales in the environment.

SOIL 610 Pedology. (3) Processes of profile development, principles of classification, comparative taxonomy, U.S. and Canadian systems.

SOIL 630 Soil Mineralogy. (3) (2 lectures per week, one term) Structure and identification of minerals, weathering, properties of clay surfaces, adsorption on clays, ion exchange.

SOIL 631 Advanced Soil Physics. (3) (2 lectures per week, one term) State and fluxes of matter and energy in the soil. Applications to movement of water, salts, nutrients; diffusion of gases; heat transfer. Discussion of significant research in soil physics.

WILD 605 Advanced Wildlife Ecology. (3) (2 class hours per week) Discussion of current topics in wildlife ecology with special reference to the research interests of staff and students involved.

WILD 610 Fish Ecology. (3) (3 class hours per week) A critical examination of current topics in fish ecology; discussion of migration, reproductive strategies, sex determination mechanisms, competition, communication and predator-prey relationships.

WOOD 640 Recent Advances: Tree Ecophysiology. (3) (3 lectures per week) Discussion of the effects of environmental factors on the physiology of trees. Both anthropogenic and natural factors will be discussed.

WOOD 660 Recent Advances: Forest Ecology. (3) (2 hours seminar) Review and discussion of current literature in forest ecology. Topics covered will depend on the research interests of students and may include population biology of forest plants, forest succession, forest nutrition and nutrient cycling, computer modeling of forest systems.

56 Neurology and Neurosurgery

Graduate Program in Neuroscience
Division of Neuroscience
Department of Neurology and Neurosurgery
Departments of Psychiatry, Ophthalmology, and Anaesthesia
Montreal Neurological Institute, Room 141
3801 University Street
Montreal, QC H3A 2B4
Canada

Telephone: 514-398-1229/398-1905
Fax: 514-398-4621
Email: GPNS@mcgill.ca or monique.ledermann@mcgill.ca
Website: www.mcgill.ca/gpns

Director, Graduate Program in Neuroscience — J. Nalbantoglu
Co-Director, Graduate Program in Neuroscience — D. Ragsdale
Chair, Dept. of Neurology and Neurosurgery — R. Riopelle

56.1 Staff

Professors

A. Aguayo; M.D.(Cordoba Natn.), F.R.C.P.(C)
A. Andermann; M.D., C.M., M.Sc., Ph.D.(McG.)
F. Andermann; B.A.(Paris), B.Sc.,(McG.), M.D.(Montr.), F.R.C.P.(C)
J. Antel; M.D., B.Sc.(Manit.), F.R.C.P.(C)
D. Arnold; B.Sc., M.D.(Cnelli), F.R.C.P.(C) (James McGill Professor)
M. Avoli; M.D.(Rome), Ph.D.(McG.)
P. Barker; Ph.D.(Alta.), B.Sc.(S. Fraser)
D. Colman; Ph.D.(SUNY)
S. David; Ph.D.(Manil.)
D. Del Maestro; M.D.(W. Ont.), Ph.D.(Uppsalna), F.R.C.S.(C), D.A.B.N.S., F.A.C.S.
M. Diksic; B.Sc., Ph.D.(Zagreb)
J.R. Dunn: B.Sc., Ph.D.(Br. Col.)
H. Durham; M.Sc.(W. Ont.), Ph.D.(Alta.)
A. Evans; M.Sc.(Sur.), Ph.D.(Leeds)
J.P. Farmer; M.D., M.Sc.(McG.), F.R.C.P.(C)
S. Carbonetto; M.Sc.(Mass.), Ph.D.(N. Carolina)
H. Cherfkh, M.D.(W. Ont.), F.R.C.P.(C)
D. Colman; Ph.D.(SUNY)
S. David; Ph.D.(Manil.)
D. E. Del Maestro; M.D.(W. Ont.), Ph.D.(Uppsalna), F.R.C.S.(C), D.A.B.N.S., F.A.C.S.

Scholar

M. Jones-Gotman; B.A.(Calif.), M.A., Ph.D.(McG.)
P. McPherson; M.Sc.(Man.), Ph.D.(Iowa) (William Dawson Scholar)
B. Milner; B.A., Sc.D.(Cant.), Ph.D.(McG)
G. Mohr; M.D.(Stras.)
Adjunct Professors

56.2 Programs Offered
M.Sc. and Ph.D. in Neuroscience.

56.3 Admission Requirements

General
The applicant must be a university graduate and hold a bachelor's degree in a field related to the subject selected for graduate work.

The applicant must present evidence of high academic achievement. A standing equivalent to a cumulative grade point average of 3.0 out of a possible 4.0 is required by Graduate and Postdoctoral Studies; however, the GPNS prefers applicants to show a higher academic standing, and requires a minimum GPA of 3.3.

Applicants with degrees from a non-Canadian university may submit results of the GRE exam with their application.

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 results of the TOEFL exam with their application and have a minimum score of 600 on the paper-based test (250 on the computer-based test, or 56.4 Application Procedures

Applications will be considered upon receipt of:
1. application form;
2. transcripts;
3. letters of reference;
4. $100 application fee;
5. TOEFL test results.

All information is to be submitted to above address.

Dates for Guaranteed Consideration
For dates for guaranteed consideration, please consult the following website: www.mcgill.ca/gradapplicants/programs. Then select the appropriate program.

To meet the diversity of individual interests and backgrounds, the graduate program for each student is designed at the time of entry. As part of the admission process each applicant will identify, with the participation of the prospective thesis supervisor and the Graduate Studies Committee, a research thesis topic and the course work necessary to complete the training deemed necessary for the degree sought. These decisions become an integral part of the graduation requirements for the student.

56.5 Program Requirements

GENERAL
1. Students must select an Advisory Committee, in conjunction with their thesis supervisor. This committee will consist of the thesis supervisor and two other individuals who will participate in discussions with students about their research program.
2. Students are required to submit a written thesis proposal to the Graduate Studies Committee (at the end of their first year for M.Sc. students, and at least one month prior to the Candidacy Examination for Ph.D. students). This document must state the hypothesis being tested, the relevant literature, and a summary of the methods that will be used to address the research question. This proposal will then be orally presented to the student's Advisory Committee which will also review the written proposal and communique its recommendations to the student and the Graduate Studies Committee.
3. Students will present a formal seminar on their research work prior to writing their thesis. This presentation will be attended by the student's Advisory Committee and members of the Graduate Studies Committee who will report their impressions and recommendations to the student.
4. An annual oral informal presentation of research work accomplished will be presented to the student's Advisory Committee which in turn presents its report to the Graduate Studies Committee.

M.Sc. Degree

M.Sc. in Neuroscience (Thesis) (45 credits)
Students with a B.Sc., B.A. or M.D. degree: A minimum of 45 credits is distributed as follows:*

**Required Courses (33 credits)**
NEUR 697 (9) Master's Project Proposal first term of studies
NEUR 698 (9) Master's Seminar Presentation second term of students
NEUR 699 (12) Master's Thesis Submission third term of studies

**Complementary Courses (6 credits)**
6 credits in other graduate-level specialty courses relevant to program Upon recommendation, depending upon their particular background and needs, students may be requested to take additional selected courses.

**Research requirements:**
Presentation of a thesis in a subfield of neuroscience. The thesis must be based upon the research of the student. While not necessarily requiring an exhaustive review of work in a particular field or a great deal of original scholarship, the thesis must show familiarity with previous work in the field and must demonstrate the ability of the candidate to carry out research and to organize
results, all of which must be presented in good literary style. The Graduate Studies Committee expects the student's research should be of sufficient quality for publication in a peer-reviewed journal. A seminar on the thesis topic is given prior to writing the thesis, and each year, a report from the student's Advisory Committee is required by the graduate Studies Committee.

**Residence requirements:**
Three terms of full-time study.

### PH.D. DEGREE

**Ph.d. in Neuroscience**

**Required Core Courses (3 credits)**
- NEUR 630* (3) Principles of Neuroscience 1
- NEUR 700 (0) Doctoral Candidacy Examination

**Complementary Courses (9 - 11 credits)**
- must take one of:
  - NEUR 631* (3) Principles of Neuroscience 2
  - NEUR 610* (5) Central Nervous System

6 credits (2 courses) of approved courses at the 500 level or higher in consultation with the graduate program advisor.

* Note: A student may receive certain exemptions if the student can display equivalency for NEUR 630, NEUR 631, or NEUR 610. Requests for course exemptions will be considered only for these courses.

**Course requirements:**

Students with an M.Sc. degree continuing in this Department have no required courses if they have taken the minimum four required graduate courses at the master's level (including NEUR 630, and either NEUR 631 or NEUR 610). It may be recommended that they take specialty courses related to their field of study in neuroscience. Students with an M.Sc. degree from another program will be required to take NEUR 630 and NEUR 631 and/or other courses listed under the M.Sc. degree depending upon their background and field of study.

Students with an M.D. degree proceeding directly into a Ph.D. program will be required to take NEUR 630 and NEUR 631. Recently graduated M.D.s should have the equivalent of NEUR 610, and may be granted equivalence. They will also be required to take 6 credits of graduate-level courses.

**Doctoral Candidacy Examination (NEUR 700)**

All students registering directly into the Ph.D. program, regardless of prior degrees from McGill or any other academic institutions, must complete the Doctoral Candidacy Examination within 18 months of initial registration in the Program. This is a qualifying examination consisting of a formal presentation and oral examination of the thesis proposal. The questioning will pertain to the student's knowledge and understanding of his/her field of specialization in neuroscience as well as the research proposal. Its primary purpose is to evaluate the student's ability to carry out original scholarship.

The Candidacy Examination will be conducted in conjunction with the Transfer seminar for all students currently registered in the M.Sc. program who apply for transfer to the Ph.D.

**Research requirements:**

Presentation of a thesis in a subfield of neuroscience. The thesis must display original scholarship expressed in satisfactory literary style and must be a distinct contribution to knowledge. After the thesis has been submitted to, and approved by Graduate and Postdoctoral Studies, a final oral exam will be held on the subject of the thesis and subjects immediately related to it.

**Residence requirements:**

Three years of resident study of which one year may be completed in the master's program.

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**56.6 Courses**

Students preparing to register should consult Class Schedule on the web at [www.mcgill.ca/student-records/register/class-schedule](http://www.mcgill.ca/student-records/register/class-schedule) for the most up-to-date list of courses available; courses may have been added, rescheduled or cancelled after this Calendar was published. Class Schedule lists courses by term and includes days, times, locations, and names of instructors.

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

★ Denotes courses taught only in alternate years.

**NEUR 507 Topics in Radiopharmaceutical Imaging.** (3) (Fall) (Restriction: Not open to students who have taken NEUR 607.) The course deals with neuroreceptor and oncologic imaging and imaging of cerebral bloodflow and metabolism. The role of radiochemistry and medical physics will be demonstrated in the context of clinical and research applications. Understanding how radiochemistry and medical physics intermingle with the medical aspects of radiotracers will result in a deeper insight into the complex pathways of tracer design and the methods necessary to properly interpret the data obtained.

★ **NEUR 550 Biomedical Imaging.** (3) (Winter) (Prerequisite: BIOL 200, BIOL 201, BIOL 311, BIOL 312, PHGY 209, PHGY 210 or Permission of Instructor.) An interdisciplinary course on the basic principles of imaging and cellular/molecular biology of free radicals, transition metals, oxidative stress and antioxidants and their roles in health and disease.

**NEUR 560 History of Neuroscience.** (3) (Fall) (Prerequisite: Permission of the instructor.) A historical survey of neuroscience, from antiquity to the major discoveries of the 20th century. Conceptual and technical advances having led to our current understanding of brain function and dysfunctions will be discussed. Particular attention will be given to sensory systems and cognitive processes.

**NEUR 602 Current Topics in Neuroimaging.** (3) (Fall) (Prerequisite: Permission of Unit Instructor) Current topics in Neuroimaging.

**NEUR 603 Computational Neuroscience.** (3) (Winter) A survey of computational methods commonly used to model brain function, including mathematical modeling to describe the relationship between neuronal activity and perception, action, and cognition. Mathematical basis for vision, motor control and attention. Data relevant to brain processes and models explaining these data, using engineering, statistics and artificial intelligence.

★ **NEUR 604 Neuroimaging Seminar 3.** (3) (Winter) (Prerequisites: NEUR 630, NEUR 631 or NEUR 610; and permission of instructor) (Enrolment limited to 12) Topic for 2009-2010: Issues in neuroimaging. An advanced seminar in neuroimaging emphasizing current concepts of the molecular and cellular mechanisms underlying diseases of the nervous system and how the study of disease has contributed to our understanding of cell biology. Topics: genetic mutations responsible for diseases, mechanisms of selective vulnerability of cell populations, and environmental influences.

★ **NEUR 605 Neuroimaging Seminar 2.** (3) (Winter) (Offered alternate years - odd numbered years) Topic for 2008-2009: Control of Neural Development. This course focuses on neuronal development and maturation from a molecular aspect. We introduce various model organisms and systems that are used to study molecular aspects of development, explore their particular advantages and effects, and explore the cellular and molecular events that contribute to the development of the nervous system.

**NEUR 606 Methods in Neuroimaging.** (3) (Fall) (Prerequisite: Permission of Instructor.) An introduction to the design and analysis of neuroimaging experiments in humans.

**NEUR 610 Central Nervous System.** (5) (Winter) An interdisciplinary course including lectures in neuroanatomy and neurophysiology; laboratories in neuroanatomy, and clinical problems and demonstrations in neurology.
NEUR 630 PRINCIPLES OF NEUROSCIENCE 1. (3) (Fall) (Prerequisites: BIOL 200 and BIOL 201 or equivalent; permission of instructor) An overview of cellular and molecular neuroscience at the graduate level. Topics include: synthesis, processing and intracellular transport of macromolecules; development of the nervous system including neurogenesis, axonal pathfinding, synaptogenesis and myelination; neuronal survival and response to injury; generation and propagation of action potentials; neurotransmitters and synaptic transmission.

NEUR 631 PRINCIPLES OF NEUROSCIENCE 2. (3) (Winter) (Prerequisite: BIOL 200 and BIOL 201 or equivalent; permission of instructor) An overview of fundamental molecular mechanisms underlying the general features of cellular neurobiology. An advanced course based on lectures and on a critical review of primary research papers.

Biomedical Engineering

BMDE 501 SELECTED TOPICS IN BIOMEDICAL ENGINEERING. (3) (3-0-6) An overview of how techniques from engineering and the physical sciences are applied to the study of selected physiological systems and biological signals. Using specific biological examples, systems will be studied using: signal or finite-element analysis, system and identification, modelling and simulation, computer control of experiments and data acquisition.

BMDE 650 ADVANCED MEDICAL IMAGING. (3) (Prerequisite: MDPH 607) Review of advanced techniques in medical imaging including: fast magnetic resonance imaging (MRI), functional MRI, MR angiography and quantitative flow measurement, spiral and dynamic x-ray computed tomography, 2D/3D positron emission tomography (PET), basic PET physiology, tracer kinetics, surgical planning and guidance, functional and anatomical brain mapping, 2D and 3D ultrasound imaging, and medical image processing.

Dentistry

DENT 654 MECHANISMS AND MANAGEMENT OF PAIN. (3) (Restriction: Open to all health professionals) Presentation of the neurobiology of pain and analgesia, clinical pain conditions, basic and applied research methods in the study of pain, and the theory and practice of pain management. The course is designed for graduate students interested in pain mechanisms and clinical residents interested in pain management.

Medical Physics

MDPH 607 INTRODUCTION TO MEDICAL IMAGING. (3) (Prerequisite: MDPH 615) A review of the principles of medical imaging as applied to conventional diagnostic radiography, digital subtraction radiography, computed tomography and magnetic resonance imaging. The course emphasizes a linear system approach to the formation, processing and display of medical images.

Physiology

PHGY 556 TOPICS IN SYSTEMS NEUROSCIENCE. (3) (Restriction: Permission of the instructor required.) (Restriction: Not open to students who have taken PHGY 456) Topics of current interest in systems neurophysiology and behavioural neuroscience including: the neural representation of sensory information and motor behaviours, models of sensory motor integration, and the computational analysis of problems in motor control and perception. Students will be expected to present and critically discuss journal articles in class.

Psychiatry

PSYT 500 ADVANCES: NEUROBIOLOGY OF MENTAL DISORDERS. (3) (Winter) (3 hours) (Prerequisite (Undergraduate): BIOC 212 and BIOC 311, or BIOC 312, or BIOL 200 and BIOL 201, or PHGY 311, or PSYC 308 and an upper-level biological science course with permission of the instructors, or equivalent. Basic knowledge of cellular and molecular biology is required.) (Restriction: Open to U3 and graduate students only.) (Restriction: Graduate Studies strongly recommended for M.Sc. students in Psychiatry.) Current theories on the neurobiological basis of most well known mental disorders (e.g. schizophrenia, depression, anxiety, dementia). Methods and strategies in research on genetic, physiological and biochemical factors in mental illness will be discussed. Discussion will also focus on the rationale for present treatment approaches and on promising new approaches.

PSYT 515 ADVANCED STUDIES IN ADDICTION. (3) (Winter) (Prerequisites: PSYT 301 or permission from one of the instructors.) (Restriction(s): Priority will be given to graduate students registered in Psychiatry, Psychology or Neuroscience graduate programs. Open to undergraduates who have completed PSYT 301 or an equivalent course. Undergraduates must obtain permission of the instructors before registration. Not open to students who have taken PSYT 615.) Critical assessment of research tools,
reported data, and theoretical perspectives on drug addiction, with an emphasis on multi-factorial and inter-disciplinary approaches.

**PSY 630 Statistics for Neurosciences.** (3) Statistics needed for analysing the types of data generated in a laboratory setting, with emphasis on the neurosciences, will be covered. Hypothesis testing, parametric and non-parametric statistics will be studied with a practical approach, using data generated by the students. Computer analysis will be introduced.

**Psychology**

**PSYC 526 Advances in Visual Perception.** (3) (Fall) (2 lectures) We examine in detail the structure of the visual system, and its function as reflected in the perceptual abilities and behaviour of the organism. Parallels are also drawn with other sensory systems to demonstrate general principles of sensory coding.

### 57 Nursing

**School of Nursing**

Wilson Hall  
3506 University Street  
Montreal, QC H3A 2A7  
Canada

Phone: 514-398-4144  
Fax: 514-398-8455

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

**Assistant Director and Academic Advisor Graduate Programs** — Franco Carnevale  
**Associate Director, Research** — C. Céleste Johnston  
**Academic Coordinator and Academic Advisor Ph.D. Program** — Margaret Purden

#### 57.1 Staff

**Emeritus Professor**  
Elizabeth C. Logan; N., B.Sc.(Acad.), M.Sc.(Yale)

**Professors**  
Nancy Frasure-Smith; B.A., Ph.D.(Johns H.) (part-time)  
Laurie N. Gottlieb; N., B.N., M.Sc.(A.), Ph.D.(McG.) (Shaw Professor of Nursing)  
C. Céleste Johnston; N., M.S.(Boston), B.N., D.Ed.(McG.) (James McGill Professor)

**Associate Professors**  
Franco Carnevale; N., B.Sc.(N.), M.Sc.(A.), M.Ed., Ph.D.(McG.)  
Helène Ezer; N., B.Sc.(N.), M.Sc.(A.)(McG.), Ph.D.(Montr.)  
Anita J. Gagnon; N., B.Sc.(N.), M.P.H., Ph.D.(McG.)  
Oama Mansi; N., B.Sc.N.(Alexandria), M.Sc.(A.)(McG.), Ph.D. candidate(Montr.) (on leave)

**Assistant Professors**  
Marina Beaulieu; N., B.Sc., M.Sc.(A.), Ph.D.(McG.)  
Nancy Feeley; N., B.Sc.(N.), M.Sc.(A.), Ph.D.(McG.)  
Céline Gélinas; N., B.Sc.(N.), M.Sc.(N.), Ph.D.(Laval), Post Doc.(McG.)  
Mélanie Hogue; N., B.Sc.(N.), M.Sc.(A.)(McG.)

**Assistant Directors**  
C. Céleste Johnston; N., M.S.(Boston), B.N., D.Ed.(McG.) (James McGill Professor)

**Academics**  
Vincent Ballenas; N., B.Sc.(Qu.), M.Sc.(A.)(McG.)  
Brett Thoms; B.A.(N'western), M.A.(Az.), M.A., Ph.D.(Fordham), Post Doc.(Johns H.)  
Sarah Shea; N., B.Sc.(N.)(McG.)

**Faculty Lecturers**  
Cheryl Armistead; N., B.Sc.(N.), M.Sc.(N.)(Ott.)  
Madeleine M. Buck; N., B.Sc.(N.), M.Sc.(A.)(McG.)  
Mertxeltoeze Cecenas; N., B.Sc.(C'dia), M.Sc.(N.)(Ott.)  
Catherine P. Gros; N., B.Sc.(Mass.), M.Sc.(A.)(McG.) (part-time)  
Sandele Larouche; N., B.Sc.(N.)(Laval), M.Sc.(A.)(McG.)  
Norma Ponzoni; N., B.Sc.(N.), M.Sc.(N.), Ph.D.(Ott.) (Montr.)

**Contracted Faculty** (part-time)  
Deborah Abner; N., B.Sc.(N.), M.Sc.(A.)(McG.)  
Rosella Antonacci; N., M.Sc.(Admin.)

**Academic Coordinator and Academic Advisor Ph.D. Program** — Margaret Purden

**Assistant Professor**  
Mary Ellen Macdonald; B.A.(McG.), M.A.(Dal.), Ph.D., Post Doc.(McG.)

**Faculty Lecturers**  
Cheryl Armistead; N., B.Sc.(N.), M.Sc.(N.)(Ott.)

**Associate Professors**  
Madeleine M. Buck; N., B.Sc.(N.), M.Sc.(A.)(McG.)

**Professors**  
Elaine Doucette; N., B.Sc.(C'dia), B.Sc.(N.), M.Sc.(N.)(Ott.)

**Associate Professors**  
Vincent Ballenas; N., B.Sc.(Qu.), M.Sc.(A.)(McG.)

**Lecturers**  
Anita J. Gagnon; N., B.Sc.(N.), M.P.H., Ph.D.(McG.)

**Assistant Professors**  
Céline Gélinas; N., B.Sc.(N.), M.Sc.(N.), Ph.D.(Laval), Post Doc.(McG.)

**Assistant Directors**  
C. Céleste Johnston; N., M.S.(Boston), B.N., D.Ed.(McG.) (James McGill Professor)

**Assistant Professors**  
Anita J. Gagnon; N., B.Sc.(N.), M.P.H., Ph.D.(McG.)

**Lecturers**  
Oama Mansi; N., B.Sc.N.(Alexandria), M.Sc.(A.)(McG.), Ph.D. candidate(Montr.) (on leave)
57.1.1 History

The McGill School of Nursing, a professional School within the Faculty of Medicine, has been educating nurses since 1920. The School is internationally recognized for its distinctive vision, leadership in nursing and the quality of its programs. McGill nursing graduates have earned a reputation as outstanding clinicians, educators, researchers, and leaders in the discipline.

Over the years, the faculty of the School at McGill has worked to formulate a philosophy about the responsibilities and practice of nursing. This philosophy, known as the McGill Model of Nursing, directs the curriculum of the programs at the School and emphasizes health, the family, learning and development, collaboration with clients and working with the resources of individuals, families and communities. Its intent is to actively promote health and well-being in people of all ages and across all situations. The McGill Model is also central to the Department of Nursing of the McGill University Health Centre.

The first programs offered at the McGill School of Nursing in the 1920s were intended to develop knowledge and skill for nurses working in the field of community health. In those early years, education programs offered at McGill were directed at nurses holding diplomas from hospital schools. Since 1957, the School has offered a first-level undergraduate degree in nursing to university students interested in health care. The increasing complexity of nursing practice, coupled with the rapid growth of knowledge about human behaviour during health and illness led to the development of the master's program in nursing in 1961. In 1974, the School opened the first direct entry master's program in Nursing. This program, which remains the only one of its kind in Canada, admits students with a B.A. or B.Sc. in the social or biological sciences and selected course requisites to a three-year clinically-based program of study that leads to a master's degree in Nursing and to licensure as a registered nurse. In 1993, the joint doctoral program began in collaboration with the Université de Montréal. Continuing its long tradition of innovation and responsiveness, in 2004, the School opened a new Bachelor of Nursing degree for students who complete the DEC 180.A.0 in Quebec and meet the University entrance requirements. The neonatal nurse practitioner program opened in 2005 and the nurse practitioner program in primary care in 2007.

The first doctoral degree in nursing in Canada was awarded at McGill in 1990. In addition the McGill School continues to publish the Canadian Journal of Nursing Research, Canada's first refereed journal of research and scholarly papers in nursing.

The School is located in Wilson Hall, which houses classrooms, learning labs, computer facilities, faculty offices, and...
mation in the Graduate and Postdoctoral Studies, General Information, Regulations and Research Guidelines.

GRE (Graduate Record Examination) general test results may be required in individual circumstances.

MASTERS PROGRAMS

Our graduate programs offer applicants the possibility of developing a program of study that fits with their career plans. The programs are intended to enable students to assume roles as clinical nurse specialists in a variety of different areas, as neonatal and primary care nurse practitioners, or to tailor their program towards a career in administration or in global health studies.

Nurse applicants to the master’s program may complete their studies on a part-time basis, i.e., minimum of 6 credits per term to a maximum of five years.

All nurse applicants are expected to hold current registration in the province or country from which they come. Nurses who are not licensed in Quebec must be immatriculated with the Ordre des infirmières et infirmiers du Québec upon the start of their graduate studies.

International nurse applicants are required to have had experience as nurses in their country of origin and in North America (recommended).

B.A./B.Sc. APPLICANTS

Applicants holding a general B.Sc. or B.A., including a number of prerequisite courses, may be admitted to a Qualifying Year. A minimum cumulative CGPA (grade point average) of 3.0 (3.2 is strongly preferred) on a scale of 4.0 is required in order to be considered for entry. Upon successful completion of the Qualifying Year, candidates apply to the master’s program. Persons prepared in another professional discipline or in nursing are not eligible for this program.

Direct-Entry applicants must complete their Qualifying Year and the master’s program of study on a full-time basis, i.e., total of three years.

Applicants should make arrangements to obtain C.P.R. (Cardio-Pulmonary Resuscitation) certification prior to entry into the Qualifying year. Applicants will be asked to provide proof of certification once registered in the program.

NURSE APPLICANTS (NURSING BACHELORS ENTRY - NBE)

Applicants for the masters degree must have completed a bachelor's degree with a minimum CGPA of 3.0 on a scale of 4.0. This preparation must be comparable to that offered in the bachelor's program at McGill in Nursing that is a minimum of 66 university credits including 12 credits in the biological sciences. Applicants must also have completed an introductory statistics course (3 credits) prior to entry. Prospective applicants whose undergraduate degree differs from the McGill degree are encouraged to contact the School of Nursing to have the eligibility of their degree assessed. Experience in Nursing is strongly recommended. (Nurse-applicants may already have CPR certification; if not they must obtain one prior to entry.)

GRADUATE DIPLOMA IN NURSING

Applicants must hold a bachelor degree in Nursing and a master’s degree in Nursing comparable to McGill (the bachelor program must have a minimum of 66 credits including 12 credits in the biological sciences) with a minimum CGPA of 3.2 on a 4.0 scale required. Prior to entry, applicants should have a minimum of 2 years of experience in Canada in the specialty area over the previous 5 years.

PH.D. PROGRAM

Applicants admitted to the doctoral program through McGill University must have completed master’s-level studies with either their undergraduate or graduate degree in nursing. Applicants must have a GPA of 3.3 on a scale of 4.0 or a high B standing.

57.4 Application Procedures

McGill’s online application for graduate program candidates is available at www.mcgill.ca/gradapplicants/apply.
Dates for Guaranteed Consideration
For dates for guaranteed consideration, please consult the following website: www.mcgill.ca/gradapplicants/programs. Then select the appropriate program.

M.Sc.(A) Program
(Nurse Bachelor entry candidates)
(Direct-Entry applicants apply to the M.Sc.(A) program online and if admitted, these candidates will be entering the Qualifying Year)

See the Nursing website at www.nursing.mcgill.ca for more information on the application process as well as the supporting documents required in addition to the Minerva online application.

Graduate Diploma in Nursing
See Nursing website at www.nursing.mcgill.ca for more information on eligibility and the application process.

Ph.D. Program
Before submitting an application on Minerva, applicants must have been in contact with a faculty member who could serve as a potential supervisor. The faculty member, after reviewing the completed application indicates in writing agreement to supervise. If applicable, applicants must also submit their TOEFL or IELTS score as early as possible in the application process.

Applicants must provide the following information:
1. An up-to-date CV.
2. Two official copies of academic transcripts (undergraduate and graduate).
3. A sample of written scholarly work, preferably in which the applicant is the sole or primary author (25 pages or less). Examples are: a published or unpublished manuscript illustrative of concept analysis, an in-depth literature review in a focused area or a research report (international students whose original scholarly writing is not in English or French should submit a copy of the writing translated into English or French).
4. A statement letter (3-4 pages):
   a. Why are you pursuing doctoral study in nursing science?
   b. Why did you specifically select a Ph.D. in nursing science at McGill?
   c. Please comment on your qualifications and readiness for doctoral study.
   d. What are your long-term career goals, and how do you see the program contributing to meeting them?
   e. Briefly describe a problem area in nursing science on which you think you would like to focus.
   f. List potential thesis supervisor(s) with whom you have had contact.
5. Letters of reference from two professors who are familiar with the candidate’s academic work and who can comment on his/her research aptitudes.
O.I.I.Q. (Ordre des infirmières and infirmiers du Québec) registration required only if candidate is planning to practice as a nurse in Québec.

57.5 Registration and Regulations
Official registration through Minerva must be completed by the Orientation Session in August. Students registering late for reasons unrelated to the admission procedure are subject to the late payment fee.

New students will be notified by the School of Nursing regarding the Advising/Orientation session held at the end of August. Information related to the selection of the elective courses will also be provided by the School of Nursing.

Returning students are responsible for ensuring that registration is completed according to the University timetable deadlines.

Course Requirements

Students are provided with course objectives, requirements and methods of the mean of evaluation at the beginning of each course. Students will not be permitted to write an examination in any course unless they have fulfilled the requirements, including attendance.

Vaccination/Immunization and Mask Fitting Requirements
New students in the School of Nursing must refer to the Vaccination Requirements outlined in the General University Information and Regulations in the Health Sciences Calendar. A copy of the immunization form outlining requirements can be found at www.mcgill.ca/studenthealth/vaccination. Annual flu vaccination is strongly recommended to all health science students. Entry into the McGill University Teaching Hospital Network is dependent on having met the immunization requirements. All students must have immunizations and Mask fitting completed (or in process for Hepatitis B) by the start of clinical placement in September.

CPR and First Aid Requirements
Valid First Aid and CPR Certification (Adult level C) is required no later than September 15th for Qualifying Year and Bachelor-Nursing entry master's students. Students are responsible for maintaining this certification up-to-date throughout their program of study.

Achievement Builders - Student Services
Any student who is experiencing difficulty in meeting course requirements must take advantage of the Achievement Builders Program offered through Student Services. Information is available at: www.mcgill.ca/firstyear/workshops1.

Regulations Concerning Clinical Placements Courses
- Students must be registered with the O.I.I.Q. before they can have access to clinical placements. Students who have not completed the registration procedure cannot commence clinical studies.
- Students must have met the vaccination/immunization requirements prior to commencing clinical studies in September.
- Students are required to purchase equipment such as a stethoscope and physical-assessment equipment. Information is provided at registration or within specific courses.
- Students are expected to demonstrate professional behaviour at all times. The Code of Ethics for Nurses and the McGill University Code of Student Conduct (as outlined in the Handbook on Student Rights and Responsibilities) provide guidelines. Professional behaviour is expected in relation to classmates, teachers, patients, and the institutions within which studies take place.
- In any formal documentation, students must identify themselves as a McGill Nursing Student with the respective year of study noted. Name badges must be worn at all times in clinical studies (these are ordered in the Fall semester of the first year of studies) and students must comply with the uniform policy during clinical placements.
- Attendance in clinical courses is mandatory and absences must be discussed with the instructor. Students with repeat absences may be asked to defer clinical studies if progress in the clinical course is compromised.
- Students whose performance in clinical studies does not meet the course objectives will be informed in writing and a learning plan will be developed. Students whose performance is below expectations or who are unsafe in clinical studies may be required to withdraw from the course at any time.
- Students who are identified as below expectations or considered to be incompetent or unsafe in clinical studies can be required to withdraw from the course at any time - in this case the student will receive a grade of WF or F.
- While an effort is made to place students within reasonable travelling distance for clinical studies, each student must budget a sum of money to travel to and from a patient home and clinical institutions.
57.6 Program Requirements

MASTER’S PROGRAMS

The general rules concerning higher degrees apply. (See Graduate and Postdoctoral Studies General Information and Regulations.) A minimum of two years of full-time study (or equivalent) is required for the master’s programs.

M.Sc.A. Program (48 - 60 credits)

48 credits – Nurse Bachelor Entry (Adjunct)
49 credits – Nurse Bachelor Entry (Clinical)
53 credits – Direct-Entry (Clinical)
60 credits – Nurse Bachelor Entry (Nurse Practitioner)

Required Courses (All Streams) (30 credits)

NUR2 515 (3) Applied Statistics for Nursing
NUR2 611D1/D2 (6) Seminar in Nursing
NUR2 612 (3) Research Methods in Nursing 1
NUR2 614D1/D2 (6) Clinical Laboratory - Nursing 1
NUR2 626 (3) Professional Issues in Nursing
NUR2 630 (3) Clinical Project 1
NUR2 631 (3) Clinical Project 2
NUR2 642 (3) Ethics in Advanced Practice

Complementary Courses (18 - 30 credits)

23 credits – Direct-Entry students (Clinical)
19 credits – Nursing Bachelors Entry students (Clinical)
30 credits – Nursing Bachelors Entry students (Nurse Practitioner)
18 credits – Nursing Bachelors Entry students (Adjunct)

Students should consult with the program advisor regarding the recommended courses for each stream of study. Students take the appropriate number of credits from the following list of courses:

NUR2 615 (3) Health Care Evaluation
NUR2 616 (4) Advanced Clinical Skills
NUR2 623 (3) Clinical Assessment and Therapeutics
NUR2 624 (4) Clinical Laboratory in Nursing 2
NUR2 627 (3) Nursing Practicum
NUR2 628 (4) Advanced Assessment

NUR2 640 (4) Clinical Reasoning 1
NUR2 641 (4) Clinical Reasoning 2
NUR2 643 (3) Role Development
NUR2 644 (3) Special Topics 1
or NUR2 645 (3) Special Topics 2
or NUR2 646 (3) Special Topics 3
or NUR2 647 (3) Special Topics 4
NUR2 650 (8) Practitioner Internship

or other graduate-level courses in consultation with faculty advisor.

QUALIFYING YEAR (41 credits)

(nurse-non applicants entering with B.A. or B.Sc.)

Fall Term

NUR1 222 (1) McGill Model of Nursing
NUR2 511D1 (3) Practice of Nursing Part 1
NUR2 514D1 (5) Clinical Laboratory in Nursing

2 complementary courses*

Winter Term

NUR1 235 (4) Health and Physical Assessment
NUR2 511D2 (3) Practice of Nursing Part 1
NUR2 514D2 (5) Clinical Laboratory in Nursing

2 complementary courses*

Summer Term

NUR2 571 (8) Practice and Theory in Nursing

* Complementary Courses: A total of 12 credits from Physiology, Pathology, and Pharmacology, social sciences and Nursing, are chosen in consultation with faculty to complement the student’s previous academic background.

Students must successfully complete the Qualifying Year with a minimum of B- in all courses and be recommended by the Standing and Promotions Committee for entry to the Master of Science (Applied) program. Students in the Qualifying Year will be required to submit an online application to the Master of Science (Applied) program by the dates for guaranteed consideration.

Graduate Diploma in Nursing (30 credits)

Required Courses (27 credits)

NUR2 616 (4) Advanced Clinical Skills
NUR2 628 (4) Advanced Assessment
NUR2 630 (3) Clinical Project 1
NUR2 640 (4) Clinical Reasoning 1
NUR2 641 (4) Clinical Reasoning 2
NUR2 645 (3) Special Topics 1
NUR2 646 (3) Special Topics 2

PH.D. PROGRAM

Each student's program is designed with the thesis supervisor taking into account the student's previous academic preparation, needs and research interests. The requirements for the doctoral degree are:

1. Two years of full-time residence (or equivalent). A student who has obtained a master's degree at McGill University or at an approved institution elsewhere may, on the recommendation of the School, be registered in the second year of the Ph.D. program.
2. A minimum of 18 credits beyond the master's level. Courses and seminars in research design, issues of measurement, advanced nursing, development of theory in nursing, advanced statistics and complementary course (s) in the student's major field of study are compulsory. The student's program is decided in consultation with the thesis supervisor.
The following table outlines the suggested sequence of courses for the program:

**Ph.D. Year 2:**
- NUR2 702 (3) Quantitative Research
- NUR2 703 (3) Issues of Measurement
- NUR2 730 (3) Theory Development in Nursing

Selected courses (statistics, complementary or substantive courses)*

**Ph.D. Year 3:**
- NUR2 780 (3) Advanced Nursing

Selected courses (statistics, complementary or substantive courses)*
- NUR2 701 (1) Comprehensive Examination
  * A minimum of 3 credits in advanced statistics and substantive courses is planned with the thesis supervisor.

3. Successful defence of the thesis proposal (Comprehensive Examination).

**Ph.D. in Nursing – Psychosocial Oncology Option/Concentration (PSO)**

All doctoral Nursing students registered in the Psychosocial Oncology Option complete the courses listed below. The Ph.D. thesis topic must be germane to psychosocial oncology and approved by the P.S.O. coordinating committee.

**Required Courses**
- NUR2 702 (3) Quantitative Research
- NUR2 703 (3) Issues of Measurement
- NUR2 730 (3) Theory Development in Nursing

Selected course(s) (Statistics)*
- NUR2 780 (3) Advanced Nursing
- NUR2 783 (3) Psychosocial Oncology Research
- NUR2 705 (3) Palliative Care in Cancer
- NUR2 701 (1) Comprehensive Examination
  * A minimum of 3 credits in advanced statistics

**Complementary Course (3 credits)**

One of the following courses:
- PSYC 505 (3) The Psychology of Pain
- PSYC 507 (3) Emotions, Stress, and Illness
- PSYC 753 (3) Health Psychology Seminar 1
- SWRK 609 (3) Understanding Social Care
- SWRK 668 (3) Life-Threatening Illness and Bereavement

**57.7 Courses**

Students preparing to register should consult Class Schedule on the web at [www.mcgill.ca/student-records/register/class-schedule](http://www.mcgill.ca/student-records/register/class-schedule) for the most up-to-date list of courses available; courses may have been added, rescheduled or cancelled after this Calendar was published. Class Schedule lists courses by term and includes days, times, locations, and names of instructors.

Details of the courses to be offered in the current year are also available from the School.

Courses with numbers ending D1 and D2 are taught in two consecutive terms (most commonly Fall and Winter). Students must be registered for both the D1 and D2 components. No credit will be given unless both components (D1 and D2) are successfully completed in consecutive terms.

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

**QUALIFYING PROGRAM**

**NUR1 222 McGill Model of Nursing.** (1) This introductory course provides an overview of the history and the philosophical and theoretical tenets underlying the core concepts of the Model. Students are introduced to McGill's perspective on health, family, learning, and collaborative nursing through a study of selected theoretical and research papers.

**NUR1 235 Health and Physical Assessment.** (4) (Prerequisite: NUR1 220) This course will develop basic knowledge and skills required to do a health history and to carry out basic physical assessment in infants, children, and adults.

**NUR2 511D1 (3), NUR2 511D2 (3) Practice of Nursing Part 1.** (Students must register for both NUR2 511D1 and NUR2 511D2.) (No credit will be given for this course unless both NUR2 511D1 and NUR2 511D2 are successfully completed in consecutive terms) A study of selected concepts related to the practice of nursing including health, family, normative life transitions and interpersonal interaction. The major focus is on developing an understanding of human behaviour using the process of scientific inquiry. Special emphasis is placed on the observation of people in their physical and social environments and on the analysis of clinical data as the basis for the development of innovative nursing approaches.

**NUR2 512 Practice and Theory in Nursing.** (8) Learning to nurse patients in acute care settings, who are experiencing a variety of common illness-related problems.

**NUR2 514D1 (5), NUR2 514D2 (5) Clinical Laboratory in Nursing.** (Students must register for both NUR2 514D1 and NUR2 514D2.) (No credit will be given for this course unless both NUR2 514D1 and NUR2 514D2 are successfully completed in consecutive terms) Learning to nurse through field experiences with individuals and families in the community and in acute care settings. The focus is on the application of knowledge and theory in practice and includes the testing and analysis of nursing approaches. Students work with clients and families experiencing a variety of life events including aging, birth and parenting as well as acute illness and hospitalization.

**GRADUATE PROGRAM**

**NUR2 515 Applied Statistics for Nursing.** (3) (Prerequisite(s): PSYC 204 or Undergraduate Introductory-Level Statistics Course) Principles of data analysis and statistical inference with an emphasis on the utilization and interpretation of analysis of variance and regression procedures in nursing research. An additional emphasis will be on critiquing data analysis in current nursing research articles.

**NUR2 611D1 (3), NUR2 611D2 (3) Seminar in Nursing.** (Students must register for both NUR2 611D1 and NUR2 611D2.) (No credit will be given for this course unless both NUR2 611D1 and NUR2 611D2 are successfully completed in consecutive terms) A critical study of selected concepts in nursing and health related to individuals and families. An introduction to the study of concepts and theories relevant to nursing.

**NUR2 612 Research Methods in Nursing 1.** (3) Basic knowledge and skills needed to conduct research. The philosophy and principles of scientific inquiry, research design, sampling, techniques of data collection, ethics, and incorporating research into practice are discussed with emphasis for nursing.

**NUR2 614D1 (3), NUR2 614D2 (3) Clinical Laboratory - Nursing 1.** (Students must register for both NUR2 614D1 and NUR2 614D2) (No credit will be given for this course unless both NUR2 614D1 and NUR2 614D2 are successfully completed in consecutive terms) Field experience in nursing to test and develop concepts critical to the health of individuals and families. The examination of theories relevant to nursing practice in the clinical field.
NUR2 615 HEALTH CARE EVALUATION. (3) An evaluation of educational and health care systems with particular reference to the nursing input in problems of health, health care and health care delivery. Evaluative research includes qualitative and quantitative approaches to assessing health status and quality of care.

NUR2 616 ADVANCED CLINICAL SKILLS. (4) Supervised clinical experiences in health care agencies are aimed at developing competence in technical and family nursing skills at an advanced level. Experience is determined on an individual basis according to learning needs and the student's area of interest.

NUR2 620 CURRENT THEORIES OF NURSING. (2) (Prerequisites: NUR2 611, NUR2 614 or equivalent) Current theories of nursing e.g. Orem, Roy, King, Rogers are examined along with their implications for practice, curriculum, administration, and research. The internal and external adequacy of these theories will be evaluated using selected schema. Critical analysis of issues and problems of theories in a practice discipline will be undertaken.

NUR2 621D1 (3), NUR2 621D2 (3) SEMINAR IN NURSING 2. (Students must register for both NUR2 621D1 and NUR2 621D2) (No credit will be given for this course unless both NUR2 621D1 and NUR2 621D2 are successfully completed in consecutive terms.) An opportunity for investigation of some of the critical problems in nursing as related to the student's area of inquiry. Particular emphasis is placed on theory development in nursing.

NUR2 623 CLINICAL ASSESSMENT AND THERAPEUTICS. (3) (Prerequisites: PATH 300; PHGY 201, PHGY 202 or equivalent.) Development of skills in the medical-nursing assessment and management of patients and families dealing with chronic and life-threatening illnesses. Includes instruction in history-taking and physical assessment.

NUR2 624 CLINICAL LABORATORY IN NURSING 2. (4) Field experience in nursing, incorporating extensive assessment, experimentation and evaluation of differing nursing approaches.

NUR2 625 CLINICAL LABORATORY IN NURSING 3. (6) Field experience in nursing, incorporating extensive assessment, experimentation and evaluation of differing nursing approaches.

NUR2 626 PROFESSIONAL ISSUES IN NURSING. (3) An examination of theories of learning and organizational behaviour as related to the preparation of nurses for the delivery of health care services. Implications of these theories for the assessment, development, and evaluation of nursing programs will be investigated.

NUR2 627 NURSING PRACTICUM. (3) Research, administrative or teaching projects in nursing are defined by interested faculty and developed with students. The goal is to promote and enhance scholarship activity and productivity. At completion, there should be some final product such as a manuscript, a data collection system set-up, or the synthesis of pilot data.

NUR2 628 ADVANCED ASSESSMENT. (4) (Prerequisite: NUR1 235 or permission of instructor.) Development of advanced skills in health assessment and physical examination of clients across the life span, including diagnostic tests and interventions, documentation and follow-up.

NUR2 630 CLINICAL PROJECT 1. (3) Identification of a clinical problem and development of a project to test or implement best-practice approaches.

NUR2 631 CLINICAL PROJECT 2. (3) (Prerequisite: NUR2 630.) Implementation of a project plan related to best practice approaches in health care delivery.

NUR2 635 PAIN MEASUREMENT IN CHILDREN. (3) (Prerequisite: Graduate-level course in inferential statistics and graduate or undergraduate course in child development, or permission of the instructor.) (Restriction: Health Sciences or Psychology graduate students or permission of the instructor.) Research issues surrounding the measurement of pain throughout childhood. Topics include measurement theory, theoretical and conceptual definitions of pain in children, scale construction, format and scaling issues, reliability, validity, clinical utility, developmental considerations, self-report formats, observational formats, physiological indicators of pain.
NUR 670 REASONING IN PRIMARY CARE 1, (4) (Restriction: Open only to students enrolled in the M.Sc.(A.) in Nursing (primary care nurse practitioner specialization) or the Graduate Diploma in Primary Care Nurse Practitioner.) Advanced nursing management of acute and chronic illness and the prevention of disease across the lifespan. Pathophysiology, decision making, and interventions for advanced practice. Topics include cardiovascular, respiratory, gastro-intestinal, renal and endocrinological conditions.

NUR 671 REASONING IN PRIMARY CARE 2, (4) (Restriction: Open only to students enrolled in the M.Sc.(A.) in Nursing (primary care nurse practitioner specialization) or the Graduate Diploma in Primary Care Nurse Practitioner.) Advanced nursing management of acute and chronic illness and the prevention of disease across the lifespan. Pathophysiology, decision making, and interventions for advanced practice. Topics include neurological, musculoskeletal, and dermatologic conditions.

NUR 672 REASONING IN PRIMARY CARE 3, (3) (Prerequisites: NUR 670 and NUR 671) (Restriction: Open only to students enrolled in the M.Sc.(A.) in Nursing (primary care nurse practitioner specialization) or the Graduate Diploma in Primary Care Nurse Practitioner.) Advanced nursing management of acute and chronic illness and the prevention of disease across the lifespan. Pathophysiology, decision making, and interventions for advanced practice. Topics include pregnancy, infertility, erectile dysfunction, and disease of the reproductive system.

NUR 701 COMPREHENSIVE EXAMINATION, (1)

NUR 702 QUANTITATIVE RESEARCH, (3) Examination of various experimental, quasiexperimental, correlational, and survey designs with particular focus on the use of these designs in nursing research.

NUR 705 PALLIATIVE CARE IN CANCER, (3) (Note: Required for the Psychosocial Oncology Option for Ph.D. students in the School of Nursing and Dept. of Psychology. Other Ph.D. students are welcome to join.) Psychosocial aspects of care as an integral part of whole person care for people living with a life-threatening illness.

NUR 706 QUALITATIVE NURSING RESEARCH, (3) (Corequisite: NUR 702) (Restriction: Enrolled in Ph.D. in Nursing or permission of instructor) Advanced examination of the utilization of qualitative research in nursing.

NUR 720 NURSING WORKFORCE DETERMINANTS, (3) Factors affecting the planning and management of the nursing workforce in the context of forecasting models, demographic changes, public organizational response, models of organizational behaviour and determinants of nursing sensitive outcomes, and productivity.

NUR 730 THEORY DEVELOPMENT IN NURSING, (3) (Prerequisite: NUR 620 or equivalent) This course surveys the history of nursing theory development with special emphasis placed on the approaches theory development and the factors affecting these approaches. Issues such as the level of theory, where theory derives are examined in light of the needs of a practice discipline. Future directions for theory development in nursing are explored.

NUR 780 ADVANCED NURSING, (3) (3 hours seminar weekly) (Prerequisite: NUR 621, NUR 624, NUR 625 or equivalent and permission of instructor) An in-depth analysis of selected issues and developments within nursing and health care. Included will be topics relevant to the areas of research and clinical expertise of the student and faculty.

NUR 783 PSYCHOSOCIAL ONCOLOGY RESEARCH, (3) (Restriction: Open to doctoral students and postdoctoral fellows in health sciences, social work, psychology, management and by permission of the instructor.) This seminar focuses on evidence-based research developments in psychosocial oncology. Students will explore state-of-the-art theory, research methods, findings, and intervention programs from a variety of disciplines including nursing, psychology, medicine, health services management and social work that have contributed to the emergent field of psychosocial oncology.
The Department of Occupational Health offers two graduate degree programs: a master's (M.Sc.) and a doctorate (Ph.D.) in occupational health sciences. The master's program is available on campus or in distance education format. Special student status may be granted to students who wish to take only specific courses on campus or in distance education format. Special student status may be granted to students who wish to take only specific courses.

Ph.D. Program

The objective of this program is to train independent researchers in the field of work environment and health.

58.3 Admission Requirements

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 appropriate exams, e.g., TOEFL (Test of English as a Foreign Language) with a minimum score of 550, or 213 on the computer-based test, or 86 on the internet-based test with each component score not less than 20.

M.Sc. Applied Program (Resident) (on campus)

Candidates should have completed, with a standing equivalent to a minimum cumulative grade point average (CGPA) of 3.0 out of 4, one of the requisites below:
- a bachelor of science degree or its equivalent, in a discipline relevant to occupational health or hygiene such as: chemistry, engineering, environmental sciences, physics;
- an M.D. (medicine);
- a B.Sc. in health sciences or nursing.

Distance Education

Candidates should have completed, with a standing equivalent to a minimum cumulative grade point average (CGPA) of 3.0 out of 4, one of the requisites below:
- an M.D. (medicine);
- a B.Sc. in health sciences or nursing;
- a bachelor of science degree, or its equivalent in a discipline relevant to occupational health or hygiene such as: chemistry, engineering, environmental sciences, physics.

Candidates should have at least three years of experience in industrial hygiene and/or in safety.

For medical doctors and nurses, priority will be given to candidates with at least three years of experience in occupational health.

Ph.D. Program

Candidates must hold a M.Sc. degree or its equivalent in occupational health sciences, or in a relevant discipline, such as: community health, environmental health, epidemiology, chemistry, engineering, physics, or health sciences (medicine, nursing, etc.).

58.4 Application Procedures

Dates for Guaranteed Consideration

For dates for guaranteed consideration, please consult the following website: www.mcgill.ca/gradapplicants/programs. Then select the appropriate program.

Note: We are not willing to consider any applications to be submitted for the Winter/Spring term.

Application forms are available online at www.mcgill.ca/gradapplicants/apply.

Resident (on campus)

Candidates must submit with their application: two official copies of their university transcripts, two letters of reference, a copy of their curriculum vitae and a letter describing their background (occupational health, occupational hygiene, worker safety, etc.) as well as a CAD$100 application fee. Eligible candidates may be invited for an interview with members of the Admissions Committee of the Department. Applications are considered for Fall term only. We are not willing to consider any applications to be submitted for the Winter/Spring term.

Distance Education

Candidates must submit with their application: two official transcripts from their university of graduation, two letters of recommendation, a copy of their résumé, a letter describing their career plan, the reasons for their enrolment, and how they plan
Students are required to have access to a computer and the Internet as the course material is available through the web.

Ph.D. Program
Candidates must submit with their application: two official copies of their university transcripts (undergraduate and graduate), two letters of reference (or completed special forms), a copy of their curriculum vitae and a letter describing their field of interest as well as a CAD$100 application fee.

Candidates must also submit with their application an outline of their scientific interests, indicating the field and the topic of their proposed research. Each student will be assigned to one academic staff member of the Department, who will act as his/her supervisor, who will guide him/her in the preparation of a definite research protocol.

58.5 Program Requirements

Students are required to have access to a computer and the Internet as some of the course material is most readily available by accessing the web.

- Computer skills (word processing, worksheets and graphing) are required for all programs.
- Students must obtain at least B (65%) in each course in the program.
- Students who fail one course may be granted an exam re-write, but students with two failures will be invited to withdraw from the program.

M.Sc. Applied Program (Resident) (On Campus)
A total of 45 credits is required to complete the M.Sc. program.

Teaching is organized in eight 3-credit courses and one 6-credit extended project (15 credits). The project can be surveys, laboratory work, bibliographic studies or research protocol development. The project requires students to identify an issue in their chosen area, to review the present state of knowledge relevant to that issue, and to carry out their particular project plan, which must be approved by faculty.

Normally, students extend the duration of their project into the Fall term by registering for an additional session.

Required Courses (30 credits)

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<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credit</th>
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<tbody>
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<td>OCCH 602</td>
<td>Occupational Health Practice</td>
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<tr>
<td>OCCH 603</td>
<td>Work and Environment Epidemiology 1</td>
<td>3</td>
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<td>OCCH 604</td>
<td>Monitoring Occupational Environment</td>
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<td>OCCH 605</td>
<td>Physical Health Hazards</td>
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<td>Biological and Chemical Hazards</td>
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<td>OCCH 612</td>
<td>Principles of Toxicology</td>
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<td>OCCH 614</td>
<td>Topics in Occupational Health</td>
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<td>Occupational Safety Practice</td>
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<td>OCCH 616</td>
<td>Occupational Hygiene</td>
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<td>OCCH 617</td>
<td>Occupational Diseases</td>
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<td>OCCH 624</td>
<td>Social and Behavioural Aspects - Occupational Health</td>
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<td>OCCH 625</td>
<td>Work and Environment Epidemiology 2</td>
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<td>OCCH 626</td>
<td>Basics: Physical Health Hazards</td>
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<td>OCCH 627</td>
<td>Work Physiology and Ergonomics</td>
<td>3</td>
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<tr>
<td>OCCH 630</td>
<td>Occupational Disease for OHNS</td>
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<td>OCCH 635</td>
<td>Environmental Risks to Health</td>
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<tr>
<td>OCCH 699</td>
<td>Project Occupational Health and Safety</td>
<td>15</td>
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* Note: students must pass the Master’s Integrative Examination before writing their Project.

Project Component – Required (15 credits)

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<td>Project Occupational Health and Safety</td>
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</table>

M.Sc. Applied Program (Distance Education)

The M.Sc.(A) as a distance education program takes three and one-half years to complete.

The first part of the program consists of ten 3-credit theory courses. Students enrolled in the program must successfully complete ten courses (30 credits). Equivalencies may be granted upon examination of the application by the professors concerned, and Graduate and Postdoctoral Studies.

The second part consists of writing an extended project report (15 credits). The project report will be carried out under the supervision of a member of the teaching staff. Note that students must pass the integrative exam before writing their report. A total of 45 credits is offered, the number required to complete the M.Sc. program.

Courses (30 credits)

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<td>Vocational Diseases</td>
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<td>OCCH 627</td>
<td>Work Physiology and Ergonomics</td>
<td>3</td>
</tr>
<tr>
<td>OCCH 630</td>
<td>Occupational Disease for OHNS</td>
<td>3</td>
</tr>
<tr>
<td>OCCH 635</td>
<td>Environmental Risks to Health</td>
<td>3</td>
</tr>
<tr>
<td>OCCH 600</td>
<td>Master’s Integrative Exam*</td>
<td>0</td>
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</tbody>
</table>

Each course has a final (proctored) examination at the end of the term. Some courses will be offered in alternate years.

* Note: students must pass the Master’s Integrative Examination before writing their Project.

On-campus Practicum may be held at the discretion of each professor. These sessions are held in Montreal on the McGill University campus. Their aim is to offer students additional specific learning activities. Participation in the practica is an essential component of the program.

The second part consists of writing an extended project report (15 credits). The project report is carried out under the supervision of a member of the teaching staff.

Project (15 credits)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credit</th>
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<tbody>
<tr>
<td>OCCH 699</td>
<td>Project Occupational Health and Safety</td>
<td>15</td>
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</tbody>
</table>

PH.D. Program
Three years of resident study are required for this program. Students are required to take course OCCH 706 Ph.D. Seminar on Occupational Health and Hygiene (2 credits) and are encouraged to take up to 12 credits in areas pertinent to their specialty or in areas necessary to complete their knowledge of occupational health.

All Ph.D. students must take a comprehensive examination (OCCH 700) within 18 months of registration.

A thesis committee will be established to ensure proper supervision and coverage of the different fields of expertise as required.

58.6 Courses

Students preparing to register should consult Class Schedule on the web at www.mcgill.ca/student-records/register/class-schedule for the most up-to-date list of courses available; courses may have been added, rescheduled or cancelled after this Calendar was published. Class Schedule lists courses by term and includes days, times, locations, and names of instructors.

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

Denotes limited enrolment
OCC1 550 ENABLING HUMAN OCCUPATION. (3) (4 hrs/week) (4 hrs/week) (U3 and M1 OT students only) Occupational performance (productivity, self-care, leisure) is examined through the Canadian Occupational Performance Model and the Model of Human Occupation, both of which focus on the interaction of the individual with the environment. Human performance is analyzed focusing on prevention of disability and/or restoration of function.

OCC1 551 PSYCHOSOCIAL PRACTICE in OT. (3) (Prerequisite: ANAT 321) ( Restriction: OT students only.) Principles of basic psychosocial assessments and treatment approaches for psychiatric conditions.

OCC 600 MASTER’S INTEGRATIVE EXAM. (0)
- OCC 602 OCCUPATIONAL HEALTH PRACTICE. (3) This course analyzes the functions, structure and organization of occupational health programs and services.
- OCC 603 WORK and ENVIRONMENT EPIDEMIOLOGY 1. (3) This course provides students with basic knowledge of epidemiology and statistics as applied to occupational health.

OCC 604 MONITORING OCCUPATIONAL ENVIRONMENT. (3) Principles and practices of environmental and biological monitoring of workplace hazards are addressed. Familiarization with instrumentation and calibration procedures is undertaken. Students learn to identify workplace health hazards, develop effective sampling strategies, use industrial hygiene equipment and interpret results of exposure measurements.

OCC 605 PHYSICAL HEALTH HAZARDS. (6) Properties, mechanisms of action and health effects of physical agents in the workplace and in the general environment: electromagnetic risks, noise and vibration, ionizing radiation, ventilation and thermal environment. Administrative, engineering, and medical control methods, exposure standards and safety measures for these agents.

OCC 605D1 (3), OCC 605D2 (3) PHYSICAL HEALTH HAZARDS. (Students must register for both OCC 605D1 and OCC 605D2) (No credit will be given for this course unless both OCC 605D1 and OCC 605D2 are successfully completed in consecutive terms) Course covers hearing conservation, health effects of electromagnetism, ionizing radiation safety and ventilation controls. For each of these agents, basic properties, mechanisms of action, health effects, engineering control methods, exposure standards and safety measures are introduced. Basic ventilation strategies for industry are also covered.

OCC 608 BIOLOGICAL HAZARDS. (3) Biological hazards and infectious diseases susceptible of being acquired at work and the several preventive and protective measures to be put in place, including airborne, foodborne, vectorborne infectious diseases, bioterrorism, and mold.

OCC 612 PRINCIPLES of TOXICOLOGY. (3) General principles of toxicology, routes of toxicant entry, human organs as targets of toxic action, adverse effects, time-course of reactions to toxicants. Risk assessment techniques, in vivo-in vitro toxicity models, links between human population observations and animal, cellular and biochemical models.

OCC 614 TOPICS in OCCUPATIONAL HEALTH. (3) Using a problem oriented approach, this course aims at integrating all notions seen previously in the program. Advanced learning, lectures, readings, student presentations, written assignments.

OCC 615 OCCUPATIONAL SAFETY PRACTICE. (3) Principles of safety and loss prevention; incident investigations and analyses, occupational safety management tools; loss recognition; safety standards, guidelines and legislation. Selected topics include: fire prevention; workshop, tool and machine safety; fall protection; laboratory safety; confined space entry; safe work permit systems; and materials handling.

OCC 616 OCCUPATIONAL HYGIENE. (3) An introduction to the principles and practices of industrial hygiene designed to provide the students with the knowledge required to identify health and safety hazards in the workplace.

OCC 617 OCCUPATIONAL DISEASES. (3) Review of occupational health problems structured around target organs: respiratory, musculoskeletal, skin, cardiovascular, mental disorders and aggressive agents: trauma, physical agents, solvents and metals and infectious agents. Also covered are occupational cancer, conditions associated with hypoxic and hyperbaric environments, mutagenicity, teratogenicity and reproduction disorders, pre-employment, period examination and medical activities in the workplace.

OCC 624 SOCIAL and BEHAVIOURAL ASPECTS - OCCUPATIONAL HEALTH. (3) This course explores the social science of occupational health practice, and describes influences on that practice of recent political, social and economic changes in the workforce and at the workplace, the theory of health promotion; management skills; and evaluation methods.

OCC 625 WORK and ENVIRONMENT EPIDEMIOLOGY 2. (3) Combined with OCC 608 to prepare students to evaluate the relations between exposure to workplace contaminants and health. The course involves the multidisciplinary analysis of four problems: Work-related cancer; Musculoskeletal problems; Biological hazards; Chemical intoxication.

OCC 626 BASICS: PHYSICAL HEALTH HAZARDS. (3) Basics of hearing conservation, health effects of electromagnetism, ionizing radiation safety and ventilation controls. For each of these agents, basic properties, mechanisms of action, health effects, engineering control methods, exposure standards and safety measures are studied. Basic ventilation strategies for industry are also covered.

OCC 627 WORK PHYSIOLOGY and ERGONOMICS. (3) Provide students with basic knowledge of physiological and psychological work requirements, ergonomic approach to work-related health problems and application of this type of approach to preventive and corrective measures.

OCC 630 OCCUPATIONAL DISEASES for OHNS. (3) Designed to meet independent and specific needs of occupational health nurses, it examines potential pathologies in the workplace, and subsequent disease outcomes. Focus is on an evidence-based approach to assessment, nursing diagnosis, appropriate interventions in the identification, management of occupational diseases. Worker screening strategies and disease prevention activities are introduced.

OCC 635 ENVIRONMENTAL RISKS to HEALTH. (3) Focuses on pathways of exposure from industry to non working populations, measurement of exposure and observation of effects, modeling and prediction of effects. Identifying, assessing and adapting existing data to predict effects given new exposures is a major theme. Spatial analysis, risk communication and disaster response are covered, too.

OCC 699 PROJECT OCCUPATIONAL HEALTH and SAFETY. (15) Under supervision, the student will identify an issue relevant to occupational health and report on work accomplished (i) to review the present state of knowledge and (ii) to conduct a survey and make recommendations or to devise a study proposal and to carry out a preliminary feasibility study.

OCC 699D1 (7.5), OCC 699D2 (7.5) PROJECT OCCUPATIONAL HEALTH and SAFETY. (Students must register for both OCC 699D1 and OCC 699D2) (No credit will be given for this course unless both OCC 699D1 and OCC 699D2 are successfully completed in consecutive terms) (OCCH 699D1 and OCC 699D2 together are equivalent to OCC 699) Under supervision, the student will identify an issue relevant to occupational health and report on work accomplished (i) to review the present state of knowledge and (ii) to conduct a survey and make recommendations or to devise a study proposal and to carry out a preliminary feasibility study.

OCC 700 PH.D. COMPREHENSIVE EXAMINATION. (0)

OCC 706 PH.D. SEMINAR on OCCUPATIONAL HEALTH and HYGIENE. (2) A critical appraisal of the occupational health sciences literature which addresses issues in hygiene, safety, epidemiology and toxicology. Students will develop a critical sense of the literature and increase their understanding of different research paradigms.
59 Otolaryngology

Department of Otolaryngology
Royal Victoria Hospital
687 Pine Ave. West, Room E3-37
Montreal, QC H3A 1A1
Canada

Telephone: 514-843-2820
Fax: 514-843-1403

Website: www.mcgill.ca/ent

Chair — S. Frenkiel

59.1 Staff

Emeritus Professor

J.D. Baxter; M.D., C.M., M.Sc.(McG.), F.R.C.S.(C)

Professors

S. Frenkiel; B.Sc., M.D., C.M.(McG.), F.R.C.S.(C)
A. Katsarkas; M.D.(Thess.), M.Sc.(Otol.), F.R.C.S.(C)
M.D. Schloss; M.D.(Br. Col.), F.R.C.S.(C)
T.L. Tewfik; M.D.(Alex.), F.R.C.S.(C)

Associate Professors

J.M. Black; M.D., C.M.(McG.), F.R.C.S.(C)
A. Katsarkas; M.D.(Thess.), M.Sc.(Otol.), F.R.C.S.(C)
M. Desrosiers; M.D.(Montr.), F.R.C.S.C.
N. Fanous; M.B., B.CH.(Cairo), F.R.C.S.(C)
W.R.J. Funnell; B.Eng., M.Eng., Ph.D.(McG.)
M. Hier; M.D., C.M.(McG.), F.R.C.S.(C)
K. Kost; M.D., C.M.(McG.), F.R.C.S.(C)
J. Manoukian; M.B., Ch.B.(Alex.), F.R.C.S.(C)
W.H. Novick; M.D.(Qu.), F.R.C.S.(C)
J. Rappaport; M.D.(Dal.), F.R.C.S.(C)
B. Segal; B.Sc., B.Eng., M.Eng., Ph.D.,(McG)
R.S. Shapiro; M.D., C.M.(McG.), F.R.C.S.(C)
A.G. Zeitouni; M.D.(Sher.), M.Sc.(Otol.), F.R.C.S.(C)

Assistant Professors

F. Chagnon; M.D., C.M.(McG.), F.R.C.S.(C)
M. Black; M.D.(Tor), F.R.C.S.C.
I. Fried; M.D.(Dal.), F.R.C.S.(C)
L. Nguyen; M.D., C.M.(McG.), M.Sc.(Otol), F.R.C.S.(C)
R. Payne; M.D., C.M.(McG.), M.Sc.(Otol), F.R.C.S.(C)
M. Samaha; M.D.(Qu.), F.R.C.S.(C)
G. Sejean; M.D.(Beirut), F.R.C.S.(C)
R. Sweet; M.D., C.M.(McG)
L. Tarantino; M.D.(Naples), F.R.C.S.(C)

Lecturers

A. Finesilver, J. Rothstein

Adjunct Professors

J.-J. Dufour

59.2 Program Offered

The Master of Science degree in Otolaryngology trains otolaryngologists and physicians for clinical or basic science research in Otolaryngology.

59.3 Admission Requirements

Admission to the M.Sc. program requires acceptance by a research supervisor, and the proposed program must be approved by the Departmental Research Committee.

Applicants should be otolaryngologists, or they should be currently enrolled in a residency program leading to certification in Otolaryngology, or they should be physicians with a strong interest in Otolaryngology research. Under exceptional circumstances, others (Ph.D.s, Dentists, Veterinarians, medical professionals, etc.) will be considered.

59.4 Application Procedures

Dates for Guaranteed Consideration

For dates for guaranteed consideration, please consult the following website: www.mcgill.ca/gradapplicants/programs. Then select the appropriate program.

Applications require the following documentation:
1. completed application form and personal statement form;
2. letters of reference from two professors;
3. two official copies of academic transcripts;
4. application fee: $100;
5. results of Test of English as a Foreign Language (TOEFL) (minimum of 550 on the paper-based test, 213 on the computer-based test or 86 on the internet-based test with each component score not less than 20) for 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).

Prospective students should contact research supervisors individually.

McGill’s online application form for graduate program candidates is available at www.mcgill.ca/gradapplicants/apply.

59.5 Program Requirements

M.Sc. in Otolaryngology (45 credits)
The M.Sc. program comprises a minimum of 45 credits as follows:

Required Courses (12 credits)

OTOL 602 (3) Physiology, Histopathology and Clinical Otolaryngology

OTOL 612 (3) Advanced Scientific Principles of Otolaryngology

OTOL 603 (3) Advanced Scientific Principles of Otolaryngology

OTOL 613 (3) Advanced Scientific Principles of Otolaryngology

When appropriate, courses OTOL 602, OTOL 612, OTOL 603 or OTOL 613 may be replaced by other basic science or clinical (500 level or higher) courses of relevance to Otolaryngology, as recommended or approved by the Department.

Complementary Course (3 credits)

EPIB 607 (3) Inferential Statistics or equivalent

Thesis Component – Required (30 credits)

OTOL 690 (3) Thesis 1

OTOL 691 (3) Thesis 2

OTOL 692 (6) Thesis 3

OTOL 693 (6) Thesis 4

OTOL 694 (12) Thesis 5

Students aiming to acquire an interdisciplinary background will be expected to take additional elective courses, at the undergraduate level if necessary.
59.6 Courses

Students preparing to register should consult Class Schedule on the web at www.mcgill.ca/student-records/register/class-schedule for the most up-to-date list of courses available; courses may have been added, rescheduled or cancelled after this Calendar was published. Class Schedule lists courses by term and includes days, times, locations, and names of instructors.

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

OTOL 602 PHYSIOLOGY, HISTOPATHOLOGY AND CLINICAL OTOLARYNGOLOGY 1. (3) (6 hours/week) University and hospital rounds and seminars presenting various topics in Clinical Otolaryngology.

OTOL 603 ADVANCED SCIENTIFIC PRINCIPLES - OTOLARYNGOLOGY 1. (3) (1.5 hours/week) Lectures in advanced basic-science topics of relevance to the otolaryngologist.

OTOL 612 PHYSIOLOGY, HISTOPATHOLOGY AND CLINICAL OTOLARYNGOLOGY 2. (3) (6 hours/week) University and hospital rounds and seminars presenting various additional topics in Clinical Otolaryngology.

OTOL 613 ADVANCED SCIENTIFIC PRINCIPLES - OTOLARYNGOLOGY 2. (3) (1.5 hours/week) Lectures in advanced basic-science topics of relevance to the otolaryngologist.

OTOL 690 M.SC. THESIS 1. (3) A literature search and research proposal under supervision of the research supervisor that leads to a written proposal.

OTOL 691 M.SC. THESIS 2. (3) Supervised training and research in connection with the Master’s thesis.

OTOL 692 M.SC. THESIS 3. (6) Independent research in connection with the Master’s thesis.

OTOL 693 M.SC. THESIS 4. (6) A seminar and written report to be presented to an ad hoc committee describing appropriate progress at the end of the first year of training.

OTOL 694 M.SC. THESIS 5. (12) Independent study in connection with the Master’s thesis. Presentation of results at a departmental seminar, or at a scientific meeting. Completion and final acceptance of the M.Sc. thesis by the Department and Graduate and Postdoctoral Studies.

60 Parasitology

Institute of Parasitology
Macdonald Campus
21,111 Lakeshore Road
Sainte-Anne-de-Bellevue, QC H9X 3V9
Canada
Telephone: 514-398-7722
Fax: 514-398-7857
Email: graduate.parasitology@mcgill.ca
Website: www.mcgill.ca/parasitology

Director — Timothy G. Geary

60.1 Staff

Professors
Timothy G. Geary; B.Sc.(Notre Dame), Ph.D.(Mich.) (Canada Research Chair in Parasite Biotechnology)
Roger Prichard; B.Sc., Ph.D.(NSW) (James McGill Professor)

Associate Professors
Robin N. Beech; B.Sc.(Nott.), Ph.D.(Edin.)
Elias Georges; B.Sc., Ph.D.(McG.)
Armando Jardim; B.Sc., Ph.D.(Vic. (BC))
Paula Ribeiro; B.Sc., Ph.D.(York (Can.))
Marilyn E. Scott; B.Sc.(New Br.), Ph.D.(McG.)

Assistant Professors
Florence Dzierszinski; B.Sc., M.Sc., Ph.D.(Lille, France) (Canada Research Chair in Parasite Pathogenesis)
Petra Rohrbach; B.Sc.(McG.), Ph.D.(Heidelberg, Germany)
Reza Salavati; B.A., M.A.(Calif. St.), Ph.D.(Wesl.)

Associate Members
Gregory J. Matlashewski (Medicine, Microbiology and Immunology); Manfred E. Rau (Natural Resource Sciences, Entomology); Mary Stevenson (Medicine, Experimental Medicine); Brian Ward (Medicine, Experimental Medicine)

60.2 Programs Offered

M.Sc. and Ph.D. thesis research degrees in Parasitology, with Bioinformatics and Environment options; and non-thesis Graduate Certificate and M.Sc.(Applied) degree in Biotechnology.

The Institute of Parasitology teaches and researches the phenomenon of parasitism of man and livestock. Current research involvement includes the biology, biochemical, bioinformatics, pharmacology, control, ecology, epidemiology, immunology, molecular biology, neurobiology, and population and molecular genetics of parasitic organisms, viruses and cancer cells. The non-thesis programs in Biotechnology offer a course-based curriculum with practical training in laboratory courses and internships.

The Institute is housed in its own building adjacent to the Macdonald Campus Library, and has well equipped laboratories. The Institute has small and large animal facilities on campus. The Institute is affiliated to the McGill Centre for Tropical Diseases at the Montreal General Hospital.

60.3 Admission Requirements

Candidates for either the M.Sc. or the Ph.D. thesis research degree should possess a bachelor's degree in the biological or medical sciences with a minimum cumulative grade point average of 3.2/4.0 (second class-upper division). High grades are expected in courses considered by the academic unit to be preparatory to the graduate program. Previous experience in parasitology is not essential.

Candidates for the Graduate Certificate and the M.Sc.(Applied) in Biotechnology must possess a bachelor’s degree in Biological Sciences or equivalent with a minimum cumulative grade point average of 3.0/4.0 or 3.2/4.0 GPA in the last two full-time years of university study for the Graduate Certificate, and a minimum of 3.2/4.0 CGPA for the M.Sc.(A), as well as prerequisites or equivalents. Prerequisites or equivalents: applicants are required to have sufficient background in Biochemistry, Cellular Biology and Molecular Biology, preferably at an advanced level for the Master’s Applied.

60.4 Application Procedures

Applicants for the thesis research degrees (M.Sc. and Ph.D.) must forward supporting documents to:

Thesis Research Graduate Programs
Institute of Parasitology
Macdonald Campus of McGill University
21,111 Lakeshore Road
Sainte-Anne-de-Bellevue, QC H9X 3V9
Canada
Telephone: 514-398-7722
Fax: 514-398-7857
Email: graduate.parasitology@mcgill.ca
Website: www.mcgill.ca/parasitology
Applications for the Biotechnology programs must forward supporting documents to:

Biotechnology Graduate Programs
Institute of Parasitology
McGill University, Macdonald Campus
21,111 Lakeshore Road
Sainte Anne-de-Bellevue, QC H9X 3V9
Canada
Phone: 514-398-7725
Fax: 514-398-7857
Email: program.biotech@mcgill.ca
Website: www.mcgill.ca/biotechgradprog

Applications – Complete the online application form available at www.mcgill.ca/gradapplicants/apply. Note: There is a $100 non-refundable application fee; VISA or MasterCard accepted. Applications will not be processed without payment. Paper applications, or PDF versions thereof, are no longer available. All applications to McGill must be done online. Applications will be considered upon receipt of the completed online application form, the CAD$100 application fee, and the following supporting documents:

(NOTE: DOCUMENTS SUBMITTED WILL NOT BE RETURNED)

Transcripts - Two official copies of all university-level transcripts with proof of degree(s) granted. Transcripts written in a language other than English or French must be accompanied by a certified translation. An explanation of the grading system used by the applicant's university is essential. It is the applicant's responsibility to arrange for transcripts to be sent.

It is desirable to submit a list of the titles of courses taken in the major subject, since transcripts often give course codes only. Applicants must be graduates of a university of recognized reputation and hold a bachelor's degree equivalent to a McGill Honours degree in a subject closely related to the one selected for graduate work. This implies that about one-third of all undergraduate courses should have been devoted to the subject itself and another third to cognate subjects.

Letters of Recommendation – Two letters of recommendation on letterhead (official paper) of originating institution or bearing the university seal and with original signatures from two instructors familiar with the applicant’s work, preferably in the applicant’s area of specialization. It is the applicant’s responsibility to arrange for these letters to be sent.

Competency in English – Applicants to graduate studies whose mother tongue is not English and who have completed 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 appropriate exams, e.g., TOEFL (minimum score 577 on the paper-based test, 233 on the computer-based test or 90 on the internet-based test with each component not less than 20). The MCHE is not considered equivalent. Results must be submitted as part of the application. The University code is 0935 (McGill University, Montreal); please use Department code 31 (Graduate Schools). Biological Sciences - Agriculture, to ensure that your TOEFL reaches this office without delay.

Graduate Record Exam (GRE) – The GRE is not required, but it is highly recommended.

Application Fee (non-refundable)
- A fee of $100 Canadian must accompany each online application (including McGill students), otherwise it cannot be considered. This sum must be remitted using a credit card (by completing the appropriate section of the application form).

Dates for Guaranteed Consideration
For dates for guaranteed consideration, please consult the following website: www.mcgill.ca/gradapplicants/programs. Then select the appropriate program. It may be necessary to delay review of the applicant’s file until the following admittance period if application materials including supporting documents are received after the dates for guaranteed consideration. International applicants are advised to apply well in advance of these dates because immigration procedures may be lengthy. Applicants must make use of the online application form available on the web at www.mcgill.ca/gradapplicants/apply.

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

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

Qualifying Students – Some applicants whose academic degrees and standing entitle them to serious consideration for admission to graduate studies, but who are considered inadequately prepared in the subject selected may be admitted to a Qualifying Program if they have met the Graduate and Postdoctoral Studies minimum CGPA of 3.0/4.0. The course(s) to be taken in a Qualifying Program will be prescribed by the academic unit concerned. Qualifying students are registered in graduate studies, but not as candidates for a degree. Only one qualifying year is permitted. Successful completion of a qualifying program does not guarantee admission to a degree program.

60.5 Program Requirements

PARASITOLOGY PROGRAMS

M.Sc. in Parasitology (Thesis) (46 credits)

Although emphasis in the graduate program is on research, satisfactory completion of graduate courses PARA 635 and PARA 655 is required. Other course work in related subjects may be required, depending upon the candidates’ background and research orientation. The minimum requirement of the M.Sc. degree is 46 credits.

Candidates are required to write a research proposal in the second term of their registration to fulfill the requirements of PARA 600. While in the Institute, all students are required to register and participate in the seminar courses PARA 606 and PARA 607. Seminar speakers include students, professors and invited guests.

Required Courses (14 credits)
PARA 600 (4) Thesis Proposal for M.Sc
PARA 606 (2) Parasitology Seminar
PARA 607 (2) Parasitology Research Seminar
PARA 635 (3) Cell Biology and Infection
PARA 655 (3) Host-Parasite Interactions

Thesis Component – Required (32 credits)
PARA 687 (10) Thesis Research 1
PARA 688 (10) Thesis Research 2
PARA 689 (12) Thesis Research 3

M.Sc. in Parasitology (Thesis) – Bioinformatics Option/Concentration (47 credits)

Required Courses (17 credits)
COMP 616 (3) Bioinformatics Seminar
PARA 600 (4) Thesis Proposal for M.Sc
PARA 606 (2) Parasitology Seminar
PARA 607 (2) Parasitology Research Seminar
PARA 635 (3) Cell Biology and Infection
PARA 655 (3) Host-Parasite Interactions
In the first year of the doctoral program, the candidates must successfully complete a written thesis proposal and make an oral presentation on their proposed research to fulfill PARA 700. Satisfactory completion of graduate courses PARA 635 and PARA 655 is required. While in the Institute, all students are required to participate in the seminar courses (PARA 710 and PARA 711). Also required is the presentation, and subsequent defense, of a satisfactory thesis based on the student's research. Depending upon the candidate's background, other course work may be required.

**Course Work**
Depending upon the candidate's background, other course work may be required.

**Ph.D. Comprehensive – Required** (0 credits)
PARA 700 (0) Thesis Proposal for Ph.D.

**Thesis - Required**
Also required is the presentation, and subsequent defence, of a satisfactory thesis based on the student’s research.

**Ph.D. in Parasitology – Bioinformatics Option/Concentration**

**Required Courses** (13 credits)

- COMP 616 (3) Bioinformatics Seminar
- PARA 635 (3) Cell Biology and Infection
- PARA 655 (3) Host-Parasite Interactions
- PARA 710 (2) Parasitology Ph.D. Seminar 1
- PARA 711 (2) Parasitology Ph.D. Seminar 2

**Complementary Courses** (6 credits)

- 6 credits from the following courses:
  - BINF 621 (3) Bioinformatics: Molecular Biology
  - BMDE 652 (3) Bioinformatics: Proteomics
  - BTEC 555 (3) Structural Bioinformatics
  - COMP 618 (3) Bioinformatics: Functional Genomics
  - PHGY 603 (3) Systems Biology and Biophysics

Additional courses at the 500, 600, or 700 level may be required at the discretion of the candidate's supervisory committee.

**Ph.D. Comprehensive – Required** (0 credits)
PARA 700 (0) Thesis Proposal for Ph.D.

**Thesis - Required**
Also required is the presentation, and subsequent defence, of a satisfactory thesis based on the student's research.

**Ph.D. in Parasitology – Environment Option/Concentration**

**Required Courses** (46 credits)

- PARA 655 (3) Host-Parasite Interactions
- PARA 635 (3) Cell Biology and Infection
- PARA 710 (2) Parasitology Seminar 1
- PARA 711 (2) Parasitology Seminar 2

**Complementary Courses** (6 credits)

- 6 credits from the following courses:
  - ENVR 610 (3) Foundations of Environmental Policy
  - ENVR 650 (1) Environmental Seminar 1
  - ENVR 651 (1) Environmental Seminar 2
  - ENVR 652 (1) Environmental Seminar 3
  - PARA 600 (4) Thesis Proposal for M.Sc
  - PARA 606 (2) Parasitology Seminar
  - PARA 607 (2) Parasitology Research Seminar

or other graduate course recommended by the advisory committee and approved by the Environment Option Committee.

**Note:** Other course work in related subjects may be required, depending upon the candidate’s background and research orientation.

**Thesis Component – Required** (26 credits)

- PARA 688 (10) Thesis Research 1
- PARA 689 (12) Thesis Research 3
- PARA 690 (2) Thesis Research 4

**Ph.D. in Parasitology**

In the first year of the doctoral program, the candidates must successfully complete a written thesis proposal and make an oral presentation on their proposed research to fulfill PARA 700. Satisfactory completion of graduate courses PARA 635 and PARA 655 is required. While in the Institute, all students are required to participate in the seminar courses (PARA 710 and PARA 711). Also required is the presentation, and subsequent defense, of a satisfactory thesis based on the student's research. Depending upon the candidate's background, other course work may be required.

**Required Courses** (10 credits)

- PARA 635 (3) Cell Biology and Infection
- PARA 655 (3) Host-Parasite Interactions
- PARA 710 (2) Parasitology Ph.D. Seminar 1
- PARA 711 (2) Parasitology Ph.D. Seminar 2

**Course Work**
Depending upon the candidate's background, other course work may be required.

**Ph.D. Comprehensive – Required** (0 credits)
PARA 700 (0) Thesis Proposal for Ph.D.

**Thesis - Required**
Also required is the presentation, and subsequent defence, of a satisfactory thesis based on the student's research.

**Ph.D. in Parasitology – Environment Option/Concentration**

**Required Courses** (14 credits)

- ENVR 610 (3) Foundations of Environmental Policy
- ENVR 650 (1) Environmental Seminar 1
- ENVR 651 (1) Environmental Seminar 2
- ENVR 652 (1) Environmental Seminar 3
- PARA 600 (4) Thesis Proposal for M.Sc
- PARA 606 (2) Parasitology Seminar
- PARA 607 (2) Parasitology Research Seminar

**Complementary Courses** (6 credits)

- 6 credits from the following courses:
  - BINF 621 (3) Bioinformatics: Molecular Biology
  - BMDE 652 (3) Bioinformatics: Proteomics
  - BTEC 555 (3) Structural Bioinformatics
  - COMP 618 (3) Bioinformatics: Functional Genomics
  - PHGY 603 (3) Systems Biology and Biophysics

or other graduate course recommended by the advisory committee and approved by the Environment Option Committee.

**Note:** Other course work in related subjects may be required, depending upon the candidate’s background and research orientation.

**Thesis Component – Required** (26 credits)

- PARA 688 (10) Thesis Research 1
- PARA 689 (12) Thesis Research 3
- PARA 690 (2) Thesis Research 4

**Ph.D. in Parasitology**

In the first year of the doctoral program, the candidates must successfully complete a written thesis proposal and make an oral presentation on their proposed research to fulfill PARA 700. Satisfactory completion of graduate courses PARA 635 and PARA 655 is required. While in the Institute, all students are required to participate in the seminar courses (PARA 710 and PARA 711). Also required is the presentation, and subsequent defense, of a satisfactory thesis based on the student's research. Depending upon the candidate's background, other course work may be required.

**Required Courses** (10 credits)

- PARA 635 (3) Cell Biology and Infection
- PARA 655 (3) Host-Parasite Interactions
- PARA 710 (2) Parasitology Ph.D. Seminar 1
- PARA 711 (2) Parasitology Ph.D. Seminar 2

**Course Work**
Depending upon the candidate's background, other course work may be required.

**Ph.D. Comprehensive – Required** (0 credits)
PARA 700 (0) Thesis Proposal for Ph.D.

**Thesis - Required**
Also required is the presentation, and subsequent defence, of a satisfactory thesis based on the student's research.
BIOTECHNOLOGY PROGRAMS

M.Sc. (Applied) in Biotechnology (45 credits)
Students enrolled in the M.Sc.(A) degree must complete 45 credits, including science and non-science courses, as well as laboratory courses and a research project involving a four- to six-month internship in a research laboratory.

Required Courses (36 credits)
BIOT 505 (3) Selected Topics in Biotechnology
BTEC 501 (3) Bioinformatics
BTEC 502 (3) Biotechnology Ethics & Society
BTEC 619 (4) Biotechnology Laboratory 2
BTEC 620 (4) Biotechnology Laboratory 1
BTEC 621 (3) Biotechnology Management
BTEC 622 (2) Biotechnology Research Project 1
BTEC 623 (6) Biotechnology Research Project 2
BTEC 624 (6) Biotechnology Research Project 3
BTEC 625 (2) Biotechnology Research Project 4

Complementary Courses (9 credits)
9 credits, three courses at the 500 level or higher are to be selected within the Faculties of Agricultural and Environmental Sciences, Medicine, Science or Management in consultation with the academic advisor of the program in line with the interests of the student.

Graduate Certificate in Biotechnology (16 credits)
For the Graduate Certificate in Biotechnology, students are required to complete 16 credits of courses offered within the Faculties of Agricultural and Environmental Sciences, Medicine, and Science.

Required Courses (10 credits)
BIOT 505 (3) Selected Topics in Biotechnology
BTEC 620 (4) Biotechnology Laboratory 1
BTEC 621 (3) Biotechnology Management

Complementary Courses (6 credits)
Two courses chosen from the following:

General Topics
ANSC 622 (3) Selected Topics in Molecular Biology
BINF 511 (3) Bioinformatics for Genomics
BIOL 524 (3) Topics in Molecular Biology
BIOL 568 (3) Topics on the Human Genome
BTEC 501 (3) Bioinformatics
BTEC 502 (3) Biotechnology Ethics and Society
BTEC 535 (3) Functional Genomics in Model Organisms
BTEC 555 (3) Structural Bioinformatics
BTEC 691 (3) Biotechnology Practicum
EXMD 511 (3) Joint Venturing with Industry
EXMD 602 (3) Techniques in Molecular Genetics

Health
EXMD 610 (3) Biochemical Methods in Medical Research
PARA 635 (3) Cell Biology and Infection
PHGY 518 (3) Artificial Cells

Environment and Food
BREE 530 (3) Fermentation Engineering
CELL 500 (3) Techniques Plant Molecular Genetics
FDSC 535 (3) Food Biotechnology
PLNT 600 (3) Plant-Microbe Interactions

60.6 Courses

Students preparing to register should consult Class Schedule on the web at www.mcgill.ca/student-records/register/ class-schedule for the most up-to-date list of courses available; courses may have been added, rescheduled or cancelled after this Calendar was published. Class Schedule lists courses by term and includes days, times, locations, and names of instructors.

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

PARA 410 ENVIRONMENT AND INFECTION. (3) (2 lectures per week) (Prerequisite: BIOL 111 or AEBI 120 or equivalent) Infectious pathogens of humans and animals and their impact on the global environment are considered. The central tenet is that infectious pathogens are environmental risk factors. The course considers their impact on the human condition and juxtaposes the impact of control and treatment measures and environmental change.

PARA 438 IMMUNOLOGY. (3) (3 lectures per week) (Prerequisites: AEBI 202 or LSCI 202 or permission of instructor) An in-depth analysis of the principles of cellular and molecular immunology. The emphasis of the course is on host defense against infection and on diseases caused by abnormal immune responses.

COURSES FOR HIGHER DEGREES

BIOT 505 SELECTED TOPICS IN BIOTECHNOLOGY. (3) (Fall) (Restriction: U3 students) Current methods and recent advances in biological, medical, agricultural and engineering aspects of biotechnology will be described and discussed. An extensive reading list will complement the lecture material.

BTEC 501 BIOINFORMATICS. (3) (3 lectures per week) (Prerequisites: LSCI 202 or LSCI 204 and ANSC 326. Permission of instructor) (Restriction: Not open to students who have taken BINF 301.) This course introduces the application of computer software for analysis of biological sequence information. An emphasis is placed on the biological theory behind analytical techniques, the algorithms used and methods of developing a statistical framework for various types of analysis.

BTEC 502 BIOTECHNOLOGY ETHICS AND SOCIETY. (3) (Restriction: U3 and over.) Examination of particular social and ethical challenges posed by modern biotechnology such as benefit sharing, informed consent in the research setting, access to medical care worldwide, environmental safety and biodiversity and the ethical challenges posed by patenting life.

BTEC 535 FUNCTIONAL GENOMICS IN MODEL ORGANISMS. (3) (Prerequisite: 300-level course in genetics, molecular biology, biochemistry or permission of instructor) (Restriction: Limited to 30 students.) An overview of strategies used to understand the function of genes, especially those identified through genome sequencing and bioinformatics. Use of model organisms that have proved particularly valuable for this purpose.

BTEC 555 STRUCTURAL BIOINFORMATICS. (3) (Prerequisite: 300-level undergraduate course in molecular biology, biochemistry or permission of instructor.) Fundamentals of protein structure and the application of tools for structure determination, how protein structure allows us to understand the complex biological functions, and how knowledge of protein structure can contribute to drug discovery.

BTEC 619 BIOTECHNOLOGY LABORATORY 2. (4) (Prerequisite: BTEC 620 or permission of the instructor.) A laboratory-based course in a variety of topics including: proteomics, protein expression and purification, conventional and HPLC chromatography, protein-protein interactions, ELISA, and Western blot analysis and hybridoma techniques.

BTEC 620 BIOTECHNOLOGY LABORATORY 1. (4) (one 8-hour lab per week) Practical training in contemporary methods of molecular and cellular biology. Intended for students with background in molecular biology, biochemistry, or a related area, who are already familiar with theoretical principles of recombinant DNA technologies. Topics include: polymerase chain reaction (PCR), methods for gene cloning and mutagenesis, eukaryotic and prokaryotic gene expression systems, protein purification and methods of eukaryotic cell culture.

BTEC 621 BIOTECHNOLOGY MANAGEMENT. (3) (one 3-hour lecture per week) Topics relevant to the management of research in industry are presented by experts working in industry. This course highlights the differences existing between research done in an academic environment and research done within industry.
PARA 515 WATER, HEALTH AND SANITATION. (3) The origin and types of water contaminants including live organisms, infectious agents and chemicals of agricultural and industrial origins. Conventional and new technological advancements to eliminate water pollutants. Comparisons of water, health and sanitation between industrialized and developing countries.

PARA 600 THESIS PROPOSAL FOR M.SC. (4) Comprises a written document outlining the proposed research objectives.

PARA 606 PARASITOLOGY SEMINAR. (2) A seminar series in which students present seminars covering topics in parasitology, in areas relevant to their research interests. Students register for the course in their second term of residency. Attendance and participation are compulsory for M.Sc. students.

PARA 607 PARASITOLOGY RESEARCH SEMINAR. (2) This is a required course for M.Sc. students. A seminar course in which students registered at the Institute of Parasitology present seminars on the results of their thesis research. Students register for the course in the final term prior to thesis submission.

PARA 635 CELL BIOLOGY AND INFECTION. (3) (Prerequisite: students with some background in molecular biology) Research articles will be the primary source of information. This course will cover new principles in cell biology. In particular, the mechanisms by which gene expression is regulated through signal transduction pathways initiated at the cell surface will be presented.

PARA 655 HOST-PARASITE INTERACTIONS. (3) Lectures, tutorials and laboratory demonstrations of the principal factors which affect levels of parasite infection and treatment of infections in humans and animals. The integration and management of the host-parasite relationship in terms of transmission, population dynamics, environmental management, behaviour, immune responses, pathology, and pharmacology to decrease parasitic disease.

PARA 665 SPECIAL TOPICS IN PARASITOLOGY. (3) This course designation will be used for special courses that staff, or visiting professors, may wish to provide when student interest warrants. Examples might include a laboratory technique course, a mathematical modelling course or a special pharmacology seminar series.

PARA 687 THESIS RESEARCH 1. (10)
PARA 688 THESIS RESEARCH 2. (10)
PARA 689 THESIS RESEARCH 3. (12)
PARA 690 THESIS RESEARCH 4. (2) Thesis research.
Y. Kanber; M.D.(Turkey)
J. Lavoie; B.Sc., M.Sc., Ph.D.(Laval)
H.R. Lopez-Valle; M.D.(Mexico)
A.T. Marcus; B.Sc., M.D., C.M.(McC), F.R.C.P.(C)
V.A. Marcus; M.D., C.M.(McG), F.R.C.P.(C)
A. Nahal; M.D.(Aleppo)
V.-H. Nguyen; M.D.(Montr.), F.R.C.P.(C)
A. Omeroglu; M.D.(Istanbul)
G. Omeroglu-Altinel; M.D. (Istanbul)
D. Pilavdzic; M.D. (Zagreb), F.R.C.P.(C)
A. Sauvageau; M.D., M.Sc.(Montr.)
H. Srolovitz; B.Sc.(Pitt.), M.D.(Basle)
J. St. Cyr; M.D., C.M.(McG), F.R.C.P.(C)
H. Srolovitz; B.Sc.(Pitt.), M.D.(Basle)
J. St. Cyr; M.D., C.M.(McG), F.R.C.P.(C)

61.2 Programs Offered
M.Sc. and Ph.D. degrees in Pathology.

The Pathology Department offers research training in a wide variety of areas such as atherosclerosis, immunology and transplantation, neoplasia, cell biology, pulmonary vascular and airways disease, pulmonary edema, neurodegenerative disorders, and smooth muscle pathophysiology.

Modern techniques and equipment include light, fluorescence and electron microscopy (both transmission and scanning), cell culture, advanced immunological, pharmacological, biochemical and physiological techniques, as well as morphometry and computers.

61.3 Admission Requirements

Applicants must have a B.Sc. or the equivalent degree with an extensive background in the physical and biological sciences. An academic record equivalent to or better than a CGPA of 3.2 out of 4 at McGill is required for at least the two final full-time years of undergraduate training with a minimum CGPA of 3.0 overall.

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 the GRE and TOEFL examinations in order to properly evaluate their suitability.

Students are normally accepted into the M.Sc. program, and those candidates showing exceptional ability may be permitted to transfer into the Ph.D. program after one year of training.

Applicants who already possess an additional degree (M.Sc., M.D.) and have some research experience may be allowed to register in the Ph.D. program directly.

Prospective students apply online at www.mcgill.ca/gradapplicants/apply.

For further information, applicants may contact the Teaching Office, Department of Pathology.

61.4 Application Procedures

Dates for Guaranteed Consideration

For dates for guaranteed consideration, please consult the following website: www.mcgill.ca/gradapplicants/programs. Then select the appropriate program.

Applications will be considered upon receipt of:
1. application;
2. transcripts;
3. letters of reference;
4. $100 application fee;
5. test results (GRE, TOEFL).

All information is to be submitted directly to the Pathology Teaching Office.

All applications will be evaluated by the Graduate Students Committee. Candidates found suitable must then be accepted by a research director, and adequate funding must be obtained for both personal support and research expenses.

61.5 Program Requirements

All students must take PATH 300 plus a course in statistics if they have not completed these requirements before admission.

Candidates with insufficient background in one of the biomedical sciences will be required to take specific courses to remedy the deficiency. These and additional courses which are relevant to the student’s area of research will be chosen in consultation with the research director and Graduate Students Committee.

M.Sc. in Pathology (Thesis) (45 credits)

Candidates must complete the courses listed below and any additional courses considered necessary by the research director or the Graduate Students Committee.

Required Courses (6 credits)
PATH 620 (3) Research Seminar 1
PATH 622 (3) Research Seminar 2

Complementary Courses (9 credits)
3 credits, one of the following courses:
PATH 613 (3) Research Topics in Pathology 1
PATH 614 (3) Research Topics in Pathology 2
6 credits, two graduate-level courses offered by the Department; subject to approval of the research director and Graduate Students Committee, up to 3 graduate-level credits may be taken in another department.

Thesis Component – Required (30 credits)
PATH 690 (9) M.Sc. Thesis Research Project 1
PATH 691 (9) M.Sc. Thesis Research Project 2
PATH 692 (12) M.Sc. Thesis Research Project 3

Ph.D. in Pathology

Candidates will be evaluated primarily on their ability to conduct independent research and submit a thesis, which must be defended orally. They must also complete the courses listed below and any additional courses considered necessary by the research director or the Graduate Students Committee.

Required Courses (12 credits)
PATH 613 (3) Research Topics in Pathology 1
PATH 614 (3) Research Topics in Pathology 2
PATH 620 (3) Research Seminar 1
PATH 622 (3) Research Seminar 2
PATH 701 (0) Comprehensive Examination - Ph.D. Candidates

Complementary Courses (9 credits)
9 credits, three graduate-level courses offered by the Department; subject to approval of the research director and Graduate Students Committee, up to 3 graduate-level credits may be taken in another department.

61.6 Courses

Students preparing to register should consult Class Schedule on the web at www.mcgill.ca/student-records/register/class-schedule for the most up-to-date list of courses available; courses may have been added, rescheduled or cancelled after this Calendar was published. Class Schedule lists courses by term and includes days, times, locations, and names of instructors.

Note: All undergraduate courses administered by the Faculty of Science (courses at the 100 to 500 level) have limited enrolment. The course credit weight is given in parentheses after the title.

PATH 607 BIOCHEMICAL PATHOLOGY. (3) Lectures and seminars covering a range of topics in the field of cytokine biology, the role of cytokines in disease pathogenesis and advanced molecular techniques in the expression and regulation of cytokines.

PATH 613 RESEARCH TOPICS IN PATHOLOGY 1. (3)
PATH 614 RESEARCH TOPICS IN PATHOLOGY 2. (3)
62 Pharmacology and Therapeutics

Department of Pharmacology and Therapeutics
McIntyre Medical Sciences Building
3655 Promenade Sir-William-Osler, Room 1325
Montreal, QC H3G 1Y6
Canada

Telephone: 514-398-3623
Fax: 514-398-2045
Email: gradstudies.pharmacology@mcgill.ca
Website: www.medicine.mcgill.ca/pharma

Chair — H.H. Zingg
Graduate Program Director — TBA

62.1 Staff

Emeritus Professors
B. Collier; Ph.D.(Leeds)
T. Sourkes; Ph.D.(C'nell.)

Professors
G. Almazan; Ph.D.(McG.)
R. Capek; M.D., Ph.D.(Prague)
P.B.S. Clarke; M.A.(Camb.), Ph.D.(Lon.)
A.C. Cuello; M.D.(Buenos Aires), M.A., D.Sc.(Oxf.), F.R.S.C.
B.F. Hales; Ph.D.(McG.)
R. Maysinger; Ph.D.(S. Calif.)
P.J. McLeod; M.D.(Man.), F.R.C.P(C)
A. Ribeiro-da-Silva; M.D., Ph.D.(Oporto)
B. Robaire; Ph.D.(McG.)
H. Saragovi; Ph.D.(Miami)
M. Szyf; Ph.D.(Hebrew)
J. Trasler; M.D., C.M., Ph.D.(McG)
D.R. Varma; M.D.(L'now), Ph.D.(McG)
H.H. Zingg; M.D., Ph.D.(McG)

Associate Professors
D. Bernard; Ph.D.(Johns H.)
D. Bowie; B.Sc., Ph.D.(Lon.)
T. Hebert; Ph.D.(Tor.)
A. McKinney; Ph.D.(Ulster)
S. Nattel; M.D., C.M.(McG)
A.L. Padjen; M.D., Ph.D.(Zagreb)
B.I. Sasyuniuk; Ph.D.(Man.)
E. Zorychta; Ph.D.(McG)

Assistant Professors
G. Miller; Ph.D.(W. Ont)
J. Tanny; Ph.D.(Harv.)

Associate Members
M. Alaoui-Jamall; Ph.D.(Sorbonne)
M. Batist; M.D., C.M.(McG)
M. Culty; Ph.D.(Fr.)
G. Di Battista; B.Sc., Ph.D.(Montr.)
P. Fiset; M.D.(Laval), F.R.C.P.S(C)

S. Gauthier; M.D.(Montr.)
T. Geary; Ph.D.(Mich.)
B. Jean-Claude; Ph.D.(McG)
S. Kimmins; Ph.D.(Dal.)
S. Laporte; Ph.D.(Sher.)
C. O'Flaherty; Ph.D.(Buenos Aires)
V. Pappadopoulis; Ph.D.(Univ. Pierre & Marie Curie)
R. Prichard; Ph.D.(NSW)
R. Quirion; Ph.D.(Sher.)
S. Rousseau; Ph.D.(Laval)
Y. Shir; M.D.(Israel), Ph.D.(Johns H.)
L. Stone; Ph.D.(Minn.)
X.J. Yang; Ph.D.(Shanghai)

Adjunct Professors

62.2 Programs Offered

The Department of Pharmacology and Therapeutics offers training leading to M.Sc. (Thesis) and Ph.D. degrees. The Department also offers the Chemical Biology Interdisciplinary Graduate Option, together with the Departments of Biochemistry and Chemistry. Students interested in training in this option must first be accepted for graduate studies by one of the participating departments. Information on this option can be found at: www.mcgill.ca/biochemistry/chemicalbiology.

Pharmacology is a multi-disciplinary science which deals with all aspects of drugs and their interactions with living organisms. Thus, pharmacologists study the physical and chemical properties of drugs, their biochemical and physiological effects, mechanisms of action, pharmacokinetics and therapeutic and other uses. The Department offers broad exposure and training in both basic and clinical research in areas of specialty ranging from neuropsychopharmacology, reproductive, endocrine, receptor, cardiovascular, cancer, developmental, autonomic, clinical and biochemical pharmacology, molecular biology, to toxicology.

The present 52 full and affiliate members of the Department have research laboratories located in the McIntyre Medical Sciences Building and in a variety of hospitals, institutes and industry including the Douglas Hospital Research Center, Allan Memorial Institute, Montreal Children's Hospital, Montreal General Hospital, Royal Victoria Hospital, Montreal Heart Institute, Lady Davis Research Institute, Pfizer Canada and Merck Frosst Canada Inc. The participation of researchers from both industry and government ensures the relevance of the Department's applications oriented training programs.

62.3 Admission Requirements

Candidates are required to hold a B.Sc. degree in a discipline relevant to the proposed field of study; those with the M.D., D.D.S. or D.V.M. degrees are also eligible to apply. A background in the health sciences is recommended, but programs in biology, chemistry, mathematics, and physical sciences may be acceptable.

Admission is based on a student's academic record, letters of assessment, and, whenever possible, interviews with staff members. Students are required to take the Graduate Record Examination Aptitude Test (GRE) and the Test of English as a Foreign Language (TOEFL) or the equivalent, except as follows, in accordance with McGill policy, only those whose mother tongue is English, who graduated from a recognized Canadian institution (anglophone or francophone), or who completed an undergraduate or graduate degree at a recognized foreign institution where English is the language of instruction are exempt from providing proof of competency in English.

Inquiries relating to all aspects of graduate study should be directed to the Graduate Coordinator, Department of Pharmacology and Therapeutics as early as possible in each academic year.

Inquiries relating to all aspects of graduate study should be directed to the Graduate Coordinator, Department of Pharmacology and Therapeutics as early as possible in each academic year.
Admissions Requirements – Chemical Biology Option
As for the regular graduate programs of the participating departments, acceptance into the Chemical Biology Option consists of two steps:

1. Preliminary approval by the Department’s Graduate Committee based on the student’s transcript, references and other documents submitted with the application. The criteria for assessment at this level are the same as for the regular graduate programs of the participating departments.
2. Acceptance by an individual research director. For students wishing to participate in the Chemical Biology Option, the director must propose a research project for the student that provides training in the methods and philosophy of chemical biology. Project proposals are assessed by the Chemical Biology Program Committee.

62.4 Application Procedures
Applications will be considered upon receipt of:
1. completed official McGill University application form, available online at www.mcgill.ca/gradapplicants/apply;
2. curriculum vitae including a statement of research interests;
3. two original transcripts sent directly from all universities attended;
4. two confidential letters of recommendation from professors or research-related employers (at least one should be from an academic known to the international scientific community). There is no “Standard Form”. The letter must be printed on letterhead;
5. official GRE (www.gre.org) and TOEFL (www.toefl.org) scores (not required of applicants from Canada).

Applications and all documents should be submitted directly to the Graduate Program Coordinator, Ms. Tina Tremblay, in the Department of Pharmacology.

Dates for Guaranteed Consideration
For dates for guaranteed consideration, please consult the following website: www.mcgill.ca/gradapplicants/programs. Then select the appropriate program.

Please refer to our website (www.medicine.mcgill.ca/pharma) for complete deadlines.

62.5 Program Requirements
The objective of the M.Sc. (Thesis) and Ph.D. degree training programs is to provide in-depth independent research experience in a specific area of pharmacology.

M.Sc. in Pharmacology (Thesis) (45 credits)

Required Courses (9 credits)
PHAR 601 (6) Comprehensive Examination
PHAR 712 (3) Statistics for Pharmacologists

Complementary Courses (12 credits)
6 credits, either the following two courses:
PHAR 562 (3) General Pharmacology 1
and PHAR 563 (3) General Pharmacology 2
or, for students who have taken PHAR 562 and PHAR 563 as part of their undergraduate degree:
PHAR 697 (6) Thesis Preparation 1
6 credits, two 700-level PHAR courses.

Thesis Component – Required (24 credits)
PHAR 696 (3) Thesis Preparation
PHAR 698 (9) Thesis Preparation 2
PHAR 699 (12) Thesis Preparation 3

M.Sc. in Pharmacology (Thesis) – Chemical Biology Option/Concentration (47 credits)

Required Course (9 credits)
PHAR 601 (6) Comprehensive Examination
PHAR 712 (3) Statistics for Pharmacologists

Complementary Courses (14 credits)
2 credits, two of the following courses:
BIOC 610 (1) Seminars in Chemical Biology 1
BIOC 611 (1) Seminars in Chemical Biology 3
CHEM 689 (1) Seminars in Chemical Biology 2
CHEM 690 (1) Seminars in Chemical Biology 4

6 credits, either the following two courses:
PHAR 562 (3) General Pharmacology 1
and PHAR 563 (3) General Pharmacology 2
or, for students who have taken PHAR 562 and PHAR 563 as part of their undergraduate degree, replace them with two courses from:
BIOC 603 (3) Genomics and Gene Expression
BIOC 604 (3) Macromolecular Structure
CHEM 504 (3) Drug Design and Development 2

3 credits, one of the following courses:
PHAR 702 (3) Topics in Pharmacology 1
PHAR 703 (3) Topics in Pharmacology 2
PHAR 704 (3) Topics in Pharmacology 3
PHAR 705 (3) Topics in Pharmacology 4
PHAR 706 (3) Topics in Pharmacology 5
PHAR 707 (3) Topics in Pharmacology 6

3 credits, one of the following courses:
CHEM 502 (3) Advanced Bio-Organic Chemistry
PHAR 503 (3) Drug Design and Development 1

Ph.D. in Pharmacology
Students must successfully complete, or be exempted from, the same courses as for the equivalent M.Sc. in Pharmacology, plus one additional 700-level graduate course (for total of three), in addition to a Ph.D. thesis.

Ph.D. in Pharmacology – Chemical Biology Option/Concentration

Required Courses (7 credits)
BIOC 610 (1) Seminars in Chemical Biology 1
BIOC 611 (1) Seminars in Chemical Biology 3
CHEM 689 (1) Seminars in Chemical Biology 2
CHEM 690 (1) Seminars in Chemical Biology 4
PHAR 712 (3) Statistics for Pharmacologists

Complementary Courses (14 credits)
6 credits, either the following two courses:
PHAR 562 (3) General Pharmacology 1
and PHAR 563 (3) General Pharmacology 2
or, for students who have taken PHAR 562 and PHAR 563 as part of their undergraduate degree, replace them with two courses from:
BIOC 603 (3) Genomics and Gene Expression
BIOC 604 (3) Macromolecular Structure
CHEM 504 (3) Drug Design and Development 2
CHEM 591 (3) Bioinorganic Chemistry
CHEM 621 (5) Recent Advances in Organic Chemistry
CHEM 623 (5) Stereochemistry
CHEM 629 (6) Organic Synthesis
CHEM 655 (4) Advanced NMR Spectroscopy
PHAR 504 (3) Drug Design and Development 2
PHAR 707 (3) Topics in Pharmacology 6

6 credits, two of the following courses:
PHAR 702 (3) Topics in Pharmacology 1
PHAR 703 (3) Topics in Pharmacology 2
PHAR 704 (3) Topics in Pharmacology 3
PHAR 705 (3) Topics in Pharmacology 4
PHAR 706 (3) Topics in Pharmacology 5
PHAR 707 (3) Topics in Pharmacology 6

3 credits, one of the following courses:
CHEM 502 (3) Advanced Bio-Organic Chemistry
PHAR 503 (3) Drug Design and Development 1

Comprehensive – Required (6 credits)
PHAR 601 (6) Comprehensive Examination

Thesis

62.6 Courses
Students preparing to register should consult Class Schedule on the web at www.mcgill.ca/student-records/register/class-schedule for the most up-to-date list of courses available; courses may have been added, rescheduled or cancelled after this Calendar was published. Class Schedule lists courses by term and includes days, times, locations, and names of instructors.

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

PHAR 503 DRUG DESIGN AND DEVELOPMENT 1. (3) (Fall) (Prerequisite(s): BIOL 200, BIOL 201, BIOL 212, PHAR 300, PHAR 301, PHAR 303, or permission of coordinator) (Priority: students registered in the Minor in Pharmacology) Interdisciplinary course in drug design and development covering chemistry, mechanisms of drug action and steps in drug development, principles and problems in drug design.

PHAR 504 DRUG DESIGN AND DEVELOPMENT 2. (3) (Winter) (Prerequisites: PHAR 503, or permission of coordinator) (Restriction: U3 and graduate students. Students can register only with permission of coordinators.) Interdisciplinary course in drug design and development in which teams of 2-4 students select a lead chemical compound, design the analogues, propose the preclinical and clinical studies, present possible untoward effects, and reasons for drug (dis)approval.

PHAR 558 PHARMACOLOGY RESEARCH TOPICS. (3) (Prerequisite: PHAR 562 or permission of the instructor) (Corequisite: PHAR 563 or permission of the instructor.) Selected drug targets in their native cellular milieu, in the context of intact tissues, organs and whole animals, highlighting conceptual advances in pharmacological theory.

PHAR 562 GENERAL PHARMACOLOGY 1. (3) (Fall) (Prerequisite: PHAR 301.) (Restrictions: Open to U3 students with permission of instructors, and students registered in the Minor Pharmacology Program) Principles of pharmacology as illustrated by current issues with an emphasis on the nervous system will be discussed. Drugs classified by their molecular target of action, their mechanism of action, and possibly a rationale for therapeutic use will be presented. Students will be required to examine and interpret scientific data, to write a paper and/or participate in small group discussions.

PHAR 563 GENERAL PHARMACOLOGY 2. (3) (Winter) (Prerequisite: PHAR 301.) (Restrictions: Open to U3 students with permission of instructors, and students registered in the Minor in Pharmacology Program) Selected topics of basic interactions between chemicals and biological systems. Actions of drugs at the molecular and cellular levels. Principles of drug development.


PHAR 599 RESEARCH PROJECTS IN PHARMACOLOGY. (6) (Minimum of 12 hours per week to be spent in the lab and/or library.) (Pre/co-requisite PHAR 562 and PHAR 563 or PHAR 300 and PHAR 301) (Restrictions: Open to U3 students with permission of instructors, and students registered in the Minor Pharmacology Program. Students should consult instructors 3-4 weeks before registration. Students may not register without prior approval of the course co-ordinator(s) (Please see regulations concerning Project Courses) This course involves individual research work. Students select a project under the supervision of a staff member. Areas of interest include toxicology, endocrine, developmental, cardiovascular, reproductive and neuropharmacology. This course requires a minimum of 6 hours per week for the full year course (PHAR 599D1/PHAR 599D2), and a minimum of 12 hours per week for the half year (PHAR 599) course to be spent in the laboratory and/or library.

PHAR 599D1 (3), PHAR 599D2 (3) RESEARCH PROJECTS IN PHARMACOLOGY. (Fall) (Minimum of 6 hours per week to be spent in the lab and/or library.) (Students must register for both PHAR 599D1 and PHAR 599D2.) (No credit will be given for this course unless both PHAR 599D1 and PHAR 599D2 are successfully completed in consecutive terms) (PHAR 599D1 and PHAR 599D2 together are equivalent to PHAR 599) This course involves individual research work. Students select a project under the supervision of a staff member. Areas of interest include toxicology, endocrine, developmental, cardiovascular, reproductive and neuropharmacology. This course requires a minimum of 6 hours per week for the full year course (PHAR 599D1/PHAR 599D2), and a minimum of 12 hours per week for the half year (PHAR 599) course to be spent in the laboratory and/or library.

PHAR 601 COMPREHENSIVE. (6)

PHAR 601D1 (3), PHAR 601D2 (3) COMPREHENSIVE. (Students must register for both PHAR 601D1 and PHAR 601D2) (No credit will be given for this course unless both PHAR 601D1 and PHAR 601D2 are successfully completed in consecutive terms)

PHAR 601N1 COMPREHENSIVE. (3) (Students must also register for PHAR 601N2) (No credit will be given for this course unless both PHAR 601N1 and PHAR 601N2 are successfully completed in a twelve month period) See PHAR 601D1 for course description.

PHAR 601N2 COMPREHENSIVE. (3) (Prerequisite: PHAR 601N1) (No credit will be given for this course unless both PHAR 601N1 and PHAR 601N2 are successfully completed in a twelve month period) See PHAR 601D1 for course description.

PHAR 696 THESIS PREPARATION. (3)

PHAR 697 THESIS PREPARATION 1. (6)

PHAR 698 THESIS PREPARATION 2. (9)

PHAR 699 THESIS PREPARATION 3. (12)

PHAR 702 TOPICS IN PHARMACOLOGY 1. (3) (Prerequisite: Permission of the Instructor.) Topics in pharmacology.

PHAR 703 TOPICS IN PHARMACOLOGY 2. (3) (Prerequisite: Permission of the Instructor.) Topics in pharmacology.

PHAR 704 TOPICS IN PHARMACOLOGY 3. (3) (Prerequisite: Permission of the Instructor.) Topics in pharmacology.

PHAR 705 TOPICS IN PHARMACOLOGY 4. (3) (Prerequisite: Permission of the Instructor.) Topics in pharmacology.

PHAR 706 TOPICS IN PHARMACOLOGY 5. (3) (Prerequisite: Permission of the Instructor.) Topics in pharmacology.

PHAR 707 TOPICS IN PHARMACOLOGY 6. (3) (Prerequisite: Permission of the Instructor.) Topics in pharmacology.

PHAR 712 STATISTICS FOR PHARMACOLOGISTS. (3) (Restriction: This course is restricted to graduate students in Pharmacology and Therapeutics. Others require permission of the course coordinator.) Basic theoretical and practical aspects of statistics for pharmacologists.
63 Philosophy

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855 Sherbrooke Street West
Montreal, QC H3A 2T7
Canada

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Email: info.philosophy@mcgill.ca
Website: www.mcgill.ca/philosophy

Chair — N. Stoljar

63.1 Staff

Emeritus Professors
D. Norton; M.A.(Claremont), Ph.D.(Calif.), F.R.S.C.
C. Taylor; M.A., D.Phil.(Oxf.), F.R.S.C.

Professors
M.A. Bunge; Ph.D.(LaPlata), F.R.S.C. (John Frothingham Professor of Logic and Metaphysics)
G. DiGiovanni; B.A., M.A., S.T.B., Ph.D.(Tor.)
S. McCall; B.A.(McG.), B.Phil., D.Phil.(Oxf.)
C. Normore; B.A.(McG.), M.A., Ph.D.(Tor.).

Associate Professors
A. Al-Saji; M.A.(Louvain), Ph.D.(Emory)
R.P. Buckley; Ph.D.(Louvain)
E. Carson; M.A.(McG.), Ph.D.(Harv.)
D. Davies; B.A.(Oxf.), M.A.(Man.), Ph.D.(W. Ont.)
M. Deslauriers; B.A.(McG.), M.A., Ph.D.(Tor.)
C. Fraenkel; B.A., M.A., Ph.D.(Free Univ., Berlin) (joint appt. with Jewish Studies)
I. Gold; B.A., M.A.(McG.), Ph.D.(Prin.) (joint appt. with Psychiatry)
M. Hallett; B.Sc., Ph.D.(Lond.)
A. Laywine; B.A.(Ott.), M.A.(Montr.), Ph.D.(Chic.)
E. Lewis; B.A.(C'nell), Ph.D.(Ill.-Chic.)
J. McGilvray; B.A.(Carleton Coll.), Ph.D.(Yale)
S. Menn; M.A., Ph.D.(Chic.), M.A., Ph.D.(Johns H.)
G. Mikkelsen; M.S., Ph.D.(Chic.) (joint appt. with McGill School of Environment)
N. Stoljar; B.A., LL.B.(Syd.), Ph.D.(Prin.) (joint appt. with Social Studies of Medicine)
S. Stroud; A.B.(Harv.), Ph.D.(Prin.)

Assistant Professors
M. Blome-Tillmann; B.Phil., D.Phil.(Oxf.)
G. Fiasse; B.A., M.A., Ph.D.(Louvain) (joint appt. with Religious Studies)
I. Hirose; B.A., M.A.(Waseda), Ph.D.(St. And.) (joint appt. with McGill School of Environment)
A. Reisner; M.A.(Brist.), D.Phil.(Oxf.)
H. Sharp; M.A.(SUNY), Ph.D.(Penn.)

Faculty Lecturers
W. Roberts; Ph.D.(Penn. St.) (joint appt. with Political Science)
D. Schlimm; Ph.D.(Carn. Mell) (joint appt. with Computer Science)

Associate Professor (part-time)
K. Arvanitakis

Associate Members
B. Gillon (Linguistics)
L. Kaplan (Jewish Studies)
R. Wisnovsky (Islamic Studies)

Adjunct Professors
S. Davis (Car.)
S.-J. Hoffmann (Dawson)
I. Macdonald (Montr.)

63.2 Programs Offered

The Department offers courses of study leading to the Ph.D. in the Biomedical Ethics Unit, a course of study leading to the M.A. degree in Bioethics.

63.3 Admission Requirements

Ph.D.

Students with an Honours B.A. degree in philosophy, or the equivalent, are normally admitted to the Ph.D. program directly at the Ph.D. 1 level. The Department considers an Honours B.A. degree to include:

1) A general knowledge of the history of Western philosophy: Greek, Medieval, Modern.
2) A systematic knowledge of the main philosophical disciplines in their contemporary as well as historical contexts: logic, ethics, epistemology, and metaphysics.
3) An ability to present, in written form, clear and substantial reconstructions and analyses of the materials normally studied in the areas mentioned in (1) and (2).

To demonstrate their competence in these areas, applicants must submit transcripts of academic work, three letters of recommendation from persons with whom they have studied, and at least one substantial example (approximately 15-20 typewritten pages) of their written philosophical work.

In addition, applicants from North America whose first language is English are strongly encouraged to submit scores of the Graduate Record Examination. 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 (TOEFL score).

Students who hold an M.A. degree from another institution should apply for admission at the Ph.D. 2 level.

M.A. (Bioethics)

Students applying to the Bioethics Specialty program must write an M.A. thesis proposal. All applications to this program must also receive the approval of the Director of the Specialty program. Students who apply for this program should note that they must participate in a practicum which continues beyond the end of their second term of classes.

63.4 Application Procedures

Ph.D.

The Department considers admissions for the Fall term only. We are not willing to consider any applications to be admitted for the Winter/Spring term.

Dates for Guaranteed Consideration

For dates for guaranteed consideration, please consult the following website: www.mcgill.ca/gradapplicants/programs. Then select the appropriate program.

The online application form is available at www.mcgill.ca/gradapplicants/apply.

Applications will be considered complete upon receipt of:

1. application form;
2. $100 fee;
3. two (2) official transcripts of all post-secondary studies;
4. three (3) original letters of reference;
5. test results (GRE, TOEFL);
6. writing sample;
7. statement of intent.

All supporting documents are to be submitted to the Department of Philosophy.
M.A. specialization in Bioethics
Applications are made initially through the Department of Philosophy. Applicants must be accepted first by the Department of Philosophy and then by the Bioethics Graduate Studies Advisory Committee.

For information, please contact the Chair, Master’s Specialization in Bioethics, Biomedical Ethics Unit, 3690 Peel Street, Montreal, QC, H3A 1W9. Telephone: 514-398-6980. Fax: 514-398-8349. Email: audrey.prosser@mcgill.ca or visit: www.mcgill.ca/biomedicalethicsunit/masters.

63.5 Program Requirements

Ph.D. in Philosophy

Candidacy Paper requirement:
By December 15 of their third year in the program (Ph.D. 3) for students admitted at Ph.D. 1 and August 15 in their second year in the program (Ph.D. 3) for students admitted at Ph.D. 2, students must submit a research paper (the “candidacy paper” [3 credits]), which may be worked up from a paper written to fulfil the requirements of a graduate course, to a Thesis Advancement Committee consisting of at least two members of the staff of the Department. The membership of this committee will be determined by the Graduate Director in consultation with the student; it is anticipated that members of this committee would, in principle, direct the student's thesis. This committee assigns a grade to the student's paper and reviews her or his graduate performance; on the basis of its assessment and review, it recommends to the Department as a whole either to permit the student to continue with the Ph.D. program and undertake a thesis or to decline to permit the student to continue. Two necessary conditions for a positive recommendation are that the student (a) receive a grade of at least B+ on the candidacy paper, and (b) have at least a 3.5 GPA (on the undergraduate Grade Point scale) in the course work required for the program. The Department as a whole, taking into account the Thesis Advancement Committee's recommendation and the student's overall academic record in the program, decides whether to permit the student to continue. Students who do not receive a positive recommendation but who satisfy Graduate and Postdoctoral Studies requirements (no courses below a B- and completion of 45 credits) will be recommended to Graduate and Postdoctoral Studies by the Department to transfer from the Ph.D. program to the M.A. program.

Graduate students are expected to continue to contribute to the intellectual life of the Department after being promoted to candidacy. They can do so by participating in reading and discussion groups and, most of all, by auditing seminars both within and without their areas of specialty.

Required Courses (18 credits)
PHIL 607 (6) Pro-Seminar 1
PHIL 682 (6) Pro-Seminar 2
PHIL 685 (3) Fundamentals of Logic
PHIL 690 (3) Candidacy Paper

Language Requirement
One research language at the advanced level or two research languages at the intermediate level.

Thesis

Complementary Courses (21 - 27 credits)
Ph.D. 1 admission – (27 credits)
Ph.D. 2 admission – (21 credits)
The courses must satisfy the following area requirements:
Minimum of 6 credits from the following:
PHIL 551 (3) Seminar: Ancient Philosophy
PHIL 556 (3) Seminar: Medieval Philosophy
PHIL 560 (3) Seminar: 17th Century Philosophy
PHIL 561 (3) Seminar: 18th Century Philosophy
PHIL 567 (3) Seminar: 19th Century Philosophy
PHIL 575 (3) Seminar: Contemporary European Philosophy

and/or any other course at the 500 level or higher in the History of Philosophy recommended/accepted by the student's advisory committee. Depending on the topics covered, PHIL 607 and PHIL 682 may count towards the area requirements.

Minimum of 6 credits from the following:
PHIL 534 (3) Seminar: Ethics
PHIL 540 (3) Seminar: Philosophy and Social Sciences
PHIL 543 (3) Seminar: Medical Ethics
PHIL 544 (3) Political Theory
PHIL 548 (3) Seminar: Philosophy of Law

and/or any other course at the 500 level or higher in Value Theory recommended/accepted by the student's advisory committee. Depending on the topics covered, PHIL 607 and PHIL 682 may count towards the area requirements.

Minimum of 6 credits from the following:
PHIL 506 (3) Seminar: Philosophy of Mind
PHIL 507 (3) Seminar: Cognitive Science
PHIL 510 (3) Seminar: Advanced Logic 2
PHIL 511 (3) Seminar: Philosophy of Logic and Mathematics
PHIL 515 (3) Seminar: Philosophy of Language
PHIL 519 (3) Seminar: Epistemology
PHIL 521 (3) Seminar: Metaphysics
PHIL 570 (3) Seminar: Contemporary Analytic Philosophy

and/or any other course at the 500 level or higher in Metaphysics and Epistemology recommended/accepted by the student’s advisory committee. Depending on the topics covered, PHIL 607 and PHIL 682 may count towards the area requirements.

The remaining course(s) must be at the 500 level or higher and are to be chosen in consultation with the student's advisory committee.

Ph.D. in Philosophy – Environment Option/Concentration

The Graduate Option in Environment provides students with an appreciation of the role of science in informing decision-making in the environment sector, and the influence that political, socio-economic and ethical judgments have. The Option also provides a forum whereby graduate students bring their disciplinary perspectives together and enrich each other’s learning through structured courses, formal seminars and informal discussions and networking. Students that have been admitted through their home department or Faculty may apply for admission to the Option. Option requirements are consistent across academic units. The Option is coordinated by the MSE, in partnership with participating academic units.

Required Courses (24 credits)
PHIL 607 (6) Pro-Seminar 1
PHIL 682 (6) Pro-Seminar 3
PHIL 685 (3) Fundamentals of Logic
PHIL 690 (3) Candidacy Paper
ENVR 610 (3) Foundations of Environmental Policy
ENVR 650 (1) Environmental Seminar 1
ENVR 651 (1) Environmental Seminar 2
ENVR 652 (1) Environmental Seminar 3

Language Requirement
One research language at the advanced level or two research languages at the intermediate level.

Thesis

Complementary Courses (24 - 30 credits)
Ph.D. 1 admission – (30 credits)
Ph.D. 2 admission – (24 credits)
The courses must satisfy the following area requirements:
Minimum of 6 credits from the following:

PHIL 551 (3) Seminar: Ancient Philosophy 2
PHIL 556 (3) Seminar: Medieval Philosophy
PHIL 560 (3) Seminar: 17th Century Philosophy
PHIL 561 (3) Seminar: 18th Century Philosophy
PHIL 567 (3) Seminar: 19th Century Philosophy
PHIL 575 (3) Seminar: Contemporary European Philosophy

and/or any other course at the 500 level or higher in History of Philosophy recommended/accepted by the student's advisory committee. Depending on the topics covered, PHIL 607 and PHIL 682 may count towards the area requirements.

Minimum of 6 credits from the following:

PHIL 534 (3) Seminar: Ethics
PHIL 540 (3) Seminar: Philosophy and Social Sciences
PHIL 543 (3) Seminar: Medical Ethics
PHIL 544 (3) Political Theory
PHIL 548 (3) Seminar: Philosophy of Law

and/or any other course at the 500 level or higher in Value Theory recommended/accepted by the student's advisory committee. Depending on the topics covered, PHIL 607 and PHIL 682 may count towards the area requirements.

Minimum of 6 credits from the following:

PHIL 506 (3) Seminar: Philosophy of Mind
PHIL 507 (3) Seminar: Cognitive Science
PHIL 510 (3) Seminar: Advanced Logic 2
PHIL 511 (3) Seminar: Philosophy of Logic and Mathematics
PHIL 515 (3) Seminar: Philosophy of Language
PHIL 519 (3) Seminar: Epistemology
PHIL 521 (3) Seminar: Metaphysics
PHIL 570 (3) Seminar: Contemporary Analytic Philosophy

and/or any other course at the 500 level or higher in Metaphysics and Epistemology recommended/accepted by the student's advisory committee. Depending on the topics covered, PHIL 607 and PHIL 682 may count towards the area requirements.

3 credits chosen from:

ENVR 519 (3) Global Environmental Politics
ENVR 544 (3) Environmental Measurement and Modelling
ENVR 560 (3) Topics in Environment 3
ENVR 611 (3) The Ecology of Nature
ENVR 620 (3) Environment and Health of Species
ENVR 622 (3) Sustainable Landscapes
ENVR 630 (3) Civilization and Environment 1
ENVR 680 (3) Topics in Environment 4

or other course at the 500 level or higher recommended by the advisory committee and approved by the Environment Option Committee.

The remaining course(s) must be at the 500 level or higher and are to be chosen in consultation with the student's advisory committee.

Ph.D. in Philosophy – Gender and Women's Studies Option/Concentration

The Graduate option in Gender and Women's Studies is an interdisciplinary program for students who meet the degree requirements in Philosophy who wish to earn 9 additional credits of approved coursework focusing on gender and women's studies, and issues in feminist research and methods. The student's doctoral thesis must be on a topic centrally relating to issues of gender and/or women's studies.

Required Courses (24 credits)

PHIL 607 (6) Pro-Seminar 1
PHIL 682 (6) Pro-Seminar 3
PHIL 685 (3) Fundamentals of Logic
PHIL 690 (3) Candicacy Paper
WMST 601 (3) Feminist Theories and Methods
WMST 602 (3) Feminist Research Symposium

Language Requirement

One research language at the advanced level or two research languages at the intermediate level.

Thesis

The student's doctoral thesis must be on a topic centrally relating to issues of gender and/or women's studies.

Complementary Courses (24 - 30 credits)

Ph.D. 1 admission – (30 credits)
Ph.D. 2 admission – (24 credits)

The courses must satisfy the following area requirements:

Minimum of 6 credits from the following:

PHIL 551 (3) Seminar: Ancient Philosophy 2
PHIL 556 (3) Seminar: Medieval Philosophy
PHIL 560 (3) Seminar: 17th Century Philosophy
PHIL 561 (3) Seminar: 18th Century Philosophy
PHIL 567 (3) Seminar: 19th Century Philosophy
PHIL 575 (3) Seminar: Contemporary European Philosophy

and/or any other course at the 500 level or higher in History of Philosophy recommended/accepted by the student's advisory committee. Depending on the topics covered, PHIL 607 and PHIL 682 may count towards the area requirements.

Minimum of 6 credits from the following:

PHIL 534 (3) Seminar: Ethics
PHIL 540 (3) Seminar: Philosophy and Social Sciences
PHIL 543 (3) Seminar: Medical Ethics
PHIL 544 (3) Political Theory
PHIL 548 (3) Seminar: Philosophy of Law

and/or any other course at the 500 level or higher in Value Theory recommended/accepted by the student's advisory committee. Depending on the topics covered, PHIL 607 and PHIL 682 may count towards the area requirements.

Minimum of 6 credits from the following:

PHIL 506 (3) Seminar: Philosophy of Mind
PHIL 507 (3) Seminar: Cognitive Science
PHIL 510 (3) Seminar: Advanced Logic 2
PHIL 511 (3) Seminar: Philosophy of Logic and Mathematics
PHIL 515 (3) Seminar: Philosophy of Language
PHIL 519 (3) Seminar: Epistemology
PHIL 521 (3) Seminar: Metaphysics
PHIL 570 (3) Seminar: Contemporary Analytic Philosophy

and/or any other course at the 500 level or higher recommended by the advisory committee and approved by the Environment Option Committee.

The remaining course(s) must be at the 500 level or higher and are to be chosen in consultation with the student's advisory committee.

Complementary Courses (45 credits)

The curriculum is composed of required courses (for 6 credits) offered in the Biomedical Ethics Unit, bioethics courses (3 credit minimum) offered by Philosophy and any graduate courses required or accepted by Philosophy for the granting of a master's degree, for a total of 18 to 21 credits. A minimum of 45 credits is required including the thesis. For further information refer to the Bioethics entry.
63.6 Courses
Students preparing to register should consult Class Schedule on the web at www.mcgill.ca/student-records/register/class-schedule for the most up-to-date list of courses available; courses may have been added, rescheduled or cancelled after this Calendar was published. Class Schedule lists courses by term and includes days, times, locations, and names of instructors.

Note: All undergraduate courses administered by the Faculty of Arts (courses at the 100 to 500 level) have limited enrolment.

Note: 500-level seminars are open only to graduate students and final year Philosophy Majors, Honours and Joint Honours students, except by written permission of the Department.

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

PHIL 506 Seminar: Philosophy of Mind. (3) (Prerequisite: PHIL 306.) (Restriction: Open only to students as indicated above and to Cognitive Science Minors) (Restriction: Seminars are open only to graduate students and final year Philosophy Majors, Honours and Joint Honours students, except by written permission of the Department.) An advanced course devoted to specific topics in the philosophy of mind.

PHIL 507 Seminar: Cognitive Science. (3) (Prerequisites: PHIL 306, PHIL 415 or written permission of the instructor) (Restriction: Seminars are open only to graduate students and final year Philosophy Majors, Honours and Joint Honours students, except by written permission of the Department) An advanced discussion of a topic of philosophical interest arising from contemporary empirical work in cognitive science.

PHIL 511 Seminar: Philosophy of Logic and Mathematics. (3) (Restriction: Seminars are open only to graduate students and final year Philosophy Majors, Honours and Joint Honours students, except by written permission of the Department)

PHIL 515 Seminar: Philosophy of Language. (3) (Prerequisite: PHIL 415 or written permission of the instructor) (Restriction: Seminars are open only to graduate students and final year Philosophy Majors, Honours and Joint Honours students, except by written permission of the Department) An advanced course devoted to a topic in the philosophy of language.

PHIL 519 Seminar: Epistemology. (3) (Prerequisite: PHIL 420 or written permission of the instructor) (Restriction: Seminars are open only to graduate students and final year Philosophy Majors, Honours and Joint Honours students, except by written permission of the Department) An advanced course devoted to a topic in the theory of knowledge. Subject varies from year to year.

PHIL 521 Seminar: Metaphysics. (3) (Prerequisite: PHIL 421 or written permission of the instructor) (Restriction: Seminars are open only to graduate students and final year Philosophy Majors, Honours and Joint Honours students, except by written permission of the Department) An advanced course devoted to a topic in metaphysics.

PHIL 534 Seminar: Ethics. (3) (Prerequisite: PHIL 334 or written permission of the instructor) (Restriction: Seminars are open only to graduate students and final year Philosophy Majors, Honours and Joint Honours students, except by written permission of the Department)

PHIL 536 Seminar: Aesthetics. (3) (Prerequisite: PHIL 336 or PHIL 436 or permission of the instructor.) (Restriction: Open only to graduate students and final year Philosophy Majors, Honours and Joint Honours students, except by written permission of the Department.) An advanced course devoted to a specific topic in the area of aesthetics and/or the philosophy of art.

PHIL 540 Seminar: Philosophy and Social Sciences. (3) PHIL 541 Seminar: Philosophy of Science. (3) (Prerequisite: PHIL 441 or other requirements specified by the instructor) (Restriction: Seminars are open only to graduate students and final year Philosophy Majors, Honours and Joint Honours students, except by written permission of the Department) An advanced course devoted to a topic in the philosophy of science.

PHIL 543 Seminar: Medical Ethics. (3) (Prerequisite: PHIL 343 or written permission of the instructor) (Restriction: Seminars are open only to graduate students and final year Philosophy Majors, Honours and Joint Honours students, except by written permission of the Department) An advanced course devoted to a particular philosophical problem as it arises in the context of medical practice or the application of medical technology.

PHIL 544 Political Theory. (3) (Restriction: Seminars are open only to graduate students and final year Philosophy Majors, Honours and Joint Honours students, except by written permission of the Department)

PHIL 548 Seminar: Philosophy of Law. (3) (Prerequisite: PHIL 348 or written permission of the instructor) (Restriction: Seminars are open only to graduate students and final year Philosophy Majors, Honours and Joint Honours students, except by written permission of the Department) An advanced course devoted to a particular topic in the philosophy of law. Subject varies from year to year.

PHIL 551 Seminar: Ancient Philosophy 2. (3) (Prerequisite: at least one course in ancient philosophy and the specific requirements of individual instructors) (Restriction: Seminars are open only to graduate students and final year Philosophy Majors, Honours and Joint Honours students, except by written permission of the Department) An advanced course on a philosopher or philosophical issue articulated in antiquity.

PHIL 556 Seminar: Medieval Philosophy. (3) (Prerequisite: PHIL 345 or PHIL 357 or written permission of the instructor) (Restriction: Seminars are open only to graduate students and final year Philosophy Majors, Honours and Joint Honours students, except by written permission of the Department) An advanced course devoted to a particular topic in medieval philosophy. Subject varies from year to year.

PHIL 561 Seminar: 18th Century Philosophy. (3) (Prerequisite: PHIL 361 or written permission of the instructor) (Restriction: Seminars are open only to graduate students and final year Philosophy Majors, Honours and Joint Honours students, except by written permission of the Department) An advanced course on an eighteenth-century philosopher or philosophical issue.

PHIL 567 Seminar: 19th Century Philosophy. (3) (Prerequisite: PHIL 366 or PHIL 367 or written permission of the instructor) (Restriction: Seminars are open only to graduate students and final year Philosophy Majors, Honours and Joint Honours students, except by written permission of the Department) An advanced course on 19th-century philosophy or philosophical issue.

PHIL 570 Seminar: Contemporary Analytic Philosophy. (3) (Prerequisite: PHIL 370 or PHIL 415 or written permission of the instructor) (Restriction: Seminars are open only to graduate students and final year Philosophy Majors, Honours and Joint Honours students, except by written permission of the Department) An advanced course on some major analytic philosopher, or some issue of central importance in the analytic tradition. Subject varies from year to year.

PHIL 575 Seminar: Contemporary European Philosophy. (3) (Prerequisite: PHIL 475 or written permission of the instructor) (Restriction: Seminars are open only to graduate students and final year Philosophy Majors, Honours and Joint Honours students, except by written permission of the Department) An advanced course on contemporary European philosophy or some important issue in the Continental tradition.

PHIL 580 Seminar: Problems of Philosophy 1. (3) (Restriction: Seminars are open only to graduate students and final year Philosophy Majors, Honours and Joint Honours students, except by written permission of the Department)
PHIL 581 Seminar: Problems of Philosophy. (3) (Restriction: Seminars are open only to graduate students and final year Philosophy Majors, Honours and Joint Honours students, except by written permission of the Department) 

PHIL 590 Seminar: Special Topics in Philosophy. (3) (Prerequisites: one course in philosophy) (Restriction: Seminars are open only to graduate students and final year Philosophy Majors, Honours and Joint Honours students, except by written permission of the Department) Psychoanalysis: a critical examination. Depending on the interests of the class, areas covered would include: psychoanalytic epistemology, psychoanalysis and the pre-socratics, psychoanalysis and tragedy, reasons versus causes in psychoanalysis, hermeneutics, psychoanalytic truth, self-deception, irrationality, paradox, creativity, internal object world and its relation to external objects.

PHIL 607 Pro-Seminar 1. (6) A series of seminars on selected topics designed for professional training to graduate students. Topics will be selected from the general area of Value Theory.

PHIL 682 Pro-Seminar 3. (6) A series of seminars on selected topics designed to provide professional training to graduate students. Topics will be selected from the general area of Metaphysics/Epistemology.

PHIL 685 Fundamentals of Logic. (3) A course in intermediate logic for graduate students in Philosophy, covering such topics as axiomatic systems, formal semantics, consistency, completeness, the limitative results, intuitionistic logic, formal theories of truth, aspects of the development of logic.

PHIL 690 Candidacy Paper. (3)

PHIL 705 Guided Research in Ethics 1. (3)

PHIL 706 Guided Research in Ethics 2. (3)

PHIL 710 Guided Research in Logic 1. (3)

PHIL 711 Guided Research in Logic 2. (3)

PHIL 720 Guided Research: Philosophy of Science 1. (3)

PHIL 721 Guided Research: Philosophy of Science 2. (3)

PHIL 730 Guided Research: Philosophy of Religion 1. (3)

PHIL 731 Guided Research: Philosophy of Religion 2. (3)

PHIL 740 Guided Research: Ancient Philosophy 1. (3)

PHIL 741 Guided Research: Ancient Philosophy 2. (3)

PHIL 750 Guided Research: Medieval Philosophy 1. (3)

PHIL 751 Guided Research: Medieval Philosophy 2. (3)

PHIL 760 Guided Research: History of Philosophy 1. (3)

PHIL 761 Guided Research: History of Philosophy 2. (3)

PHIL 770 Guided Research: Philosophy of Politics 1. (3)

PHIL 771 Guided Research: Philosophy of Politics 2. (3)

PHIL 780 Guided Research: Epistemology/Metaphysics 1. (3)

PHIL 781 Guided Research: Epistemology/Metaphysics 2. (3)

64 Physical and Occupational Therapy

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64.1 Staff

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64.2 Programs Offered

Graduate Certificate in Assessing Driving Capabilities
The 15-credit post-graduate certificate program aims to train Occupational Therapists to assess the driving abilities and performance of at-risk populations, re-train drivers, recommend adaptive vehicles and adapt technical aids that will allow physically disabled individuals to return to driving and preserve their independence and quality of life. The program comprises five courses, the first two of which are offered online; the other three are a combination of online and intensive workshops.

Master of Science, Applied, in Physical Therapy
The Professional Master of Science in Physical Therapy is a 58-credit degree program including one thousand hours of fieldwork education over 5 semesters. The educational approach is consistent with adult learning, self-directed learning, reflective clinical practice and inter-professionalism. Strong links between academic and clinical fieldwork education are emphasized. Courses emphasize client-centered and evidence-based practice throughout the lifespan, across the health care continuum and include health promotion from prevention of disability to rehabilitation. In addition to fieldwork, the program requirements include courses in advanced clinical practice, research methodology and educational methodology. The master's project prepares the entry-to-practice physiotherapist to become an autonomous and effective professional through the acquisition of research skills.

Master of Science, Applied, in Occupational Therapy
The Professional Master of Science in Occupational Therapy is a 58-credit degree program that includes one thousand hours of fieldwork education over 5 semesters. The educational approach is consistent with adult learning and reflective clinical practice. The curriculum uses a case-based, problem-solving, self-directed approach across the lifespan. Strong links between academic and clinical fieldwork education are emphasized throughout the educational process. Course work will focus on client-centered and evidence-based practice, clinical reasoning, ethics and professionalism as essential components for the development of a humanistic, ethical, knowledgeable, competent, critical thinking and problem-solving Occupational Therapist. The master's project is designed to develop research and scholarly skills.

Master of Science in Rehabilitation Science
The full curriculum consists of approximately two years of study for graduates who hold a B.Sc. degree in one of the medical rehabilitation disciplines or a related field. The program consists of required and elective course work, a research proposal and a research thesis.

Master of Science in Rehabilitation Science (Non-Thesis)
The program requires three terms of full-time residence study and can usually be completed within three to four terms. It is designed for graduates who hold a B.Sc. (or equivalent) in Physical or Occupational Therapy or related health professions. Two years of clinical experience is recommended. The program trains health professionals to become consumers of research in order to promote evidence-based practice in rehabilitation science. The curriculum is made up of both required and elective courses and may also include a research project.

Ph.D. in Rehabilitation Science
This program consists of three to four years of study, on average, for graduates with master's-level training in one of the medical rehabilitation disciplines or a related field. The program consists of required and elective course work, a comprehensive written examination, a research proposal, a doctoral thesis and an oral defence.

64.3 Admission Requirements
Graduate Certificate in Assessing Driving Capabilities
1. A B.Sc. degree or equivalent in Occupational Therapy or a related field from a university of recognized reputation.
2. Evidence of high academic achievement, equivalent to B standing or a McGill CGPA of 3.0 (70-74%).
3. See points 3, 4 and 5 under M.Sc. in Rehabilitation Science for more information on prerequisites, TOEFL and GRE.

M.Sc.A.(P.T.)
1. An undergraduate degree or equivalent from a university of recognized reputation.
2. Same as M.Sc. in Rehabilitation Science.
3. No prerequisites.
4. 5. Same as M.Sc. in Rehabilitation Science.

M.Sc.A.(O.T.)
1. to 5. as above.

M.Sc. in Rehabilitation Science (Thesis)
1. A B.Sc. degree or equivalent in Physical or Occupational Therapy or a related field from a university of recognized reputation.
2. Evidence of high academic achievement, equivalent to B standing, or a McGill CGPA of 3.0 (70-74%).
3. Prerequisite courses may be required in statistics, anatomy, physiology, psychology, sociology, neurophysiology or other areas, depending on the student's anticipated specialization.
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 appropriate exams, e.g., TOEFL (Test of English as a Foreign Language) with a minimum score of 100 on the
internet-based test with each component score not less than 20 (School requirement), or the International English Language Testing System (IELTS) with a minimum overall band score of 7.0.

5. The GRE Test is recommended for the following applicants: those who do not have a B.Sc. or equivalent from a Canadian university; those who have been out of university for 5 years or more. Only the General Test is mandatory. For consideration, students must obtain a minimum score of 550 in verbal and quantitative categories and a score of 3.5 to 4 in analytical writing.

For enquiries about Graduate Records Examination, please contact GRE Educational Testing Service, Princeton, NJ 08540; telephone: 609-683-2002; website: www.gre.org. Applicants must ensure that official test results are sent to McGill University directly by the testing service. Applications cannot be considered if test results are not available.

If a graduate student accepted into the M.Sc. program demonstrates superior performance in the first year, the Graduate Committee, in consultation with the thesis supervisor, may recommend waiving the M.Sc. thesis requirement, and allow the student to proceed directly to the Ph.D. program.

M.Sc. in Rehabilitation Science (Non-Thesis)
1. to 5. as above, plus
6. Two years of clinical experience is recommended.

Ph.D. in Rehabilitation Science
1. A M.Sc. degree in a rehabilitation-related discipline from a university of recognized reputation.
2. Evidence of high academic achievement, equivalent to B+ standing, or a McGill CGPA of 3.3 (75-79%) is required.
3. Proof of proficiency in English. 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 appropriate exams, e.g., TOEFL (Test of English as a Foreign Language) with a minimum score of 100 on the internet-based test with each component score not less than 20 (School requirement), or the International English Language Testing System (IELTS) with a minimum overall band score of 7.0.
4. GRE Test with a minimum score of 600 in verbal and quantitative categories and a score of 4.5 to 5 in analytical writing. The test is recommended for the following applicants: those who do not have a B.Sc., M.Sc. or equivalent from a Canadian university; those who have been out of university for 5 years or more.

For enquiries about Graduate Records Examination, please contact GRE Educational Testing Service, Princeton, NJ 08540; telephone: 609-683-2002; website: www.gre.org. Applicants must ensure that official test results are sent to McGill University directly by the testing service. Applications cannot be considered if test results are not available.

64.4 Application Procedures

It is recommended to apply for admission online at the following address: www.mcgill.ca/gradapplicants/apply.

Applications will be considered upon receipt of:
1. the completed application form;
2. $100 application fee;
3. a complete curriculum vitae;
4. a statement of purpose;
5. two original official transcripts (university program);
6. two letters of reference on official letterhead;
7. test results (GRE, TOEFL), if required;
8. a letter(s), original(s) on letterhead, attesting to 50 hours of volunteer or paid work in a health care facility or other appropriate rehabilitation environment (required for M.Sc.A.(P.T.), M.Sc.A.(O.T.).)

Dates for Guaranteed Consideration

For dates for guaranteed consideration, please consult the following website: www.mcgill.ca/gradapplicants/programs. Then select the appropriate program.

Note: We are not willing to consider any applications to be admitted for the Winter term.

Documents are to be mailed directly.

Professional Masters Student Affairs Coordinator
School of Physical and Occupational Therapy

Masters and Ph.D. Programs:
Graduate Rehabilitation Student Affairs Coordinator
School of Physical and Occupational Therapy

Driving Certificate Program
Driving Certificate Coordinator
School of Physical and Occupational Therapy

4.5 Program Requirements

Graduate Certificate in Assessing Driving Capabilities
(15 credits)
This post-graduate certificate program for Occupational Therapists is comprised of the following five courses:

Required Courses (15 credits)

POTH 673 (3) Screening for at Risk Drivers
POTH 674 (3) Assessing Driving Ability 1
POTH 675 (3) Driving Assessment Practicum
POTH 676 (3) Adaptive Equipment and Driving
POTH 677 (3) Retraining Driving Skills

POTH 673 and 674 are offered online, whereas POTH 675, POTH 676 and POTH 677 have both online components and intensive workshops.

Master of Science, Applied, in Physical Therapy (58 credits)
The professional Master of Science, Applied in Physical Therapy is a 58-credit degree program which includes 1000 hours of fieldwork education over 5 terms and leads to professional licensure to practice.

Students admitted to the M.Sc.A. who have undergraduate degrees other than the B.Sc.(Phys.Ther.) (non-practicing) from McGill University will be required to complete a qualifying year of study, prior to beginning the master’s program. For further information about the required courses in the qualifying year, please see the appropriate section of the Undergraduate Programs Calendar available at www.mcgill.ca/courses.
Qualifying year courses by term:
Fall: POTH 550 PT Orthopedic Management; POTH 551 PT Neurological Rehabilitation; POTH 570 Strategies in PT Professional Practice
Winter: POTH 552 Cardiorespiratory Rehab; POTH 560 Integrated Ortho Management; POTH 561 Integrated Neuro Rehab.

**Required Courses** (40 credits)

- POTH 571 (7) PT Clinical Practicum 1
- POTH 572 (7) PT Clinical Practicum 2
- POTH 573 (7) PT Clinical Practicum 3
- POTH 620 (7) PT Clinical Practicum 4
- POTH 622 (3) Integrated Pain Management
- POTH 623 (3) Differential Dx and Management
- POTH 618 (3) Topics in Rehabilitation
- POTH 610 (4) Research Methodology
- POTH 612 (3) Advanced Research Methods
- PHTH 620** (3) Measurement: Rehabilitation 1
- PHTH 622 (3) Pathokinesiology
- PHTH 630 (3) Measurement: Rehabilitation 2
- PHTH 637 (3) Cancer Rehabilitation
- PHTH 633 (3) Function/Activity in Arthritis
- PHTH 634 (3) Childhood Performance Issues
- PHTH 635 (3) Cancer Rehabilitation
- PHTH 638 (3) Promoting Wellness of Seniors
- PHTH 640* (3) Role-Emerging Management

**Complementary Courses** (12 credits)

- 9 credits chosen from the following courses offered by the School.
- With permission from the Academic Director, students may take courses offered at the 500 or 600 levels by other departments at McGill.
- PHTH 661 (3) Sport Physiotherapy
- PHTH 662* (3) Advanced Manual Therapy
- PHTH 622* (3) Pathokinesiology
- PHTH 620** (3) Measurement: Rehabilitation 1
- PHTH 622** (3) Pathokinesiology
- PHTH 630 (3) Measurement: Rehabilitation 2
- PHTH 637 (3) Cancer Rehabilitation

3 credits from the Desautels Faculty of Management MBA/MD program

* not offered in 2009-2010

**Project – Required** (6 credits)

- POTH 624 (6) Master’s Project

**Master of Science, Applied, in Occupational Therapy**

(58 credits)

- The professional Master of Science, Applied in Occupational Therapy is a 58-credit degree program which includes 1000 hours of fieldwork education over 5 terms and leads to professional licensure to practice.

- Students admitted to the M.Sc.A. who have undergraduate degrees other than the B.Sc.(Occ.Ther.) (non-practicing) from McGill University will be required to complete a qualifying year of study, prior to beginning the master’s program. For further information about the required courses in the qualifying year, please see the appropriate section of the Undergraduate Programs Calendar available at www.mcgill.ca/courses.

- Qualifying year courses by term:
- Fall: OCC1 545 Therapeutic Strategies in OT1; OCC1 550 Enabling Human Occupation; OCC1-546 Strategies in OT Professional Practice
- Winter: OCC1 551 Psychosocial Practice in OT; OCC1 547 Occupational Solutions 1; OCC1 548 Holistic Approaches in OT; OCC1-549 Therapeutic Strategies in OT2.

**Required Courses** (49 credits)

- OCC1 501 (7) Clinical Practicum 1
- OCC1 502 (7) Clinical Practicum 2
- OCC1 503 (7) Clinical Practicum 3
- OCC1 602 (7) Clinical Practicum 4
- OCC1 617 (6) Occupational Solutions 2
- OCC1 616 (5) Applied OT: Psychosocial Theory
- OCC1 620 (2) Work/Ergonomics
- OCC1 622 (3) Community-Based OT
- OCC1 623 (2) Assistive Technology
- POTH 612 (3) Advanced Research Methods

**Complementary Courses** (3 credits)

- 3 credits chosen from the following courses offered by the school.
- With permission from the Academic Director, students may take courses offered at the 500 or 600 levels by other departments at McGill.
- OCC1 625 (3) Functional Environments
- OCC1 626 (3) Mental Health: Child and Youth
- POTH 614 (3) Selected Topics in Rehabilitation Science
- POTH 632 (3) Research Elective
- POTH 633 (3) Function/Activity in Arthritis
- POTH 634 (3) Childhood Performance Issues
- POTH 637 (3) Cancer Rehabilitation
- POTH 638 (3) Promoting Wellness of Seniors
- POTH 640* (3) Role-Emerging Management

**Project – Required** (6 credits)

- POTH 624 (6) Master’s Project

* not offered in 2009-2010

**Master of Science in Rehabilitation Science (Thesis)**

(45 credits)

- The program requires a minimum of three terms of full-time residence study. It is not uncommon for a student to take two or more years to complete the degree.

**Required Courses** (10 credits)

- EPIB 507 (3) Biostatistics for Health Professionals
- POTH 610 (4) Research Methodology
- POTH 614 (3) Selected Topics in Rehabilitation Science
- POTH 616 (1) Seminars in Rehabilitation Science
- POTH 617 (0) Rehabilitation Seminars 1

A research proposal is to be submitted in written form and defended in front of a supervisory committee. Research proposals should be completed by the beginning of the second full-time year.

**Complementary Courses** (6 credits)

- To be chosen from among graduate-level departmental course offerings which pertain to the student’s area of specialization or other campus courses at the 500 and 600 levels with permission of the Graduate Program Director.
- POTH 603 (3) Directed Practicum
- POTH 604 (3) Current Topics in Pediatrics
- POTH 618 (3) Topics in Rehabilitation
- POTH 620** (3) Measurement: Rehabilitation 1
- POTH 622* (3) Pathokinesiology
- POTH 630** (3) Measurement: Rehabilitation 2
- POTH 673 (3) Assessing Driving Ability 1
- POTH 675 (3) Driving Assessment Practicum
- POTH 676 (3) Adaptive Equipment and Driving
- POTH 677 (3) Retraining Driving Skills
- POTH 682 (3) Promoting Healthy Activity
- POTH 685 (3) Perception and Action

**Thesis Component – Required** (29 credits)

- POTH 696 (2) Thesis Research
- POTH 697 (6) Thesis Research 1
- POTH 698 (9) Thesis Research 2
- POTH 699 (12) Thesis Research 3

* not offered in 2009-2010

** one of: POTH 620 or POTH 630 to be chosen

All four of these courses must be registered for within the first three terms of full-time study. The course POTH 699 is carried as IP “in progress” until completion of thesis.

The student carries out a research study in an approved subject area under the guidance of an internal supervisor (from within the School) or an external supervisor (outside the School). In the case of an external supervisor, an internal co-supervisor must be appointed.
Master of Science in Rehabilitation Science (Non-Thesis) (45 credits) (Program revisions pending final University approval)

This program has two options. In the first option, students complete 30 credits of required and complementary courses plus a 15-credit research project in their area of interest. In the second option, students complete 45 credits of required and complementary course work. The program normally takes 3 to 4 terms when done on a full-time basis.

Required Courses (10 credits)
- POTH 610 (4) Research Methodology
- POTH 617 (0) Rehabilitation Seminars 1
- POTH 619 (0) Rehabilitation Seminars 2
- EDPH 689 (3) Teaching and Learning in Higher Education
- EPB 507 (3) Biostatistics for Health Professionals

Complementary Courses (35 credits)

Group A, 20 credits:
- Chosen from the following courses offered by the School or other campus courses at the 500 and 600 levels with permission of the Graduate Program Director.
- POTH 508 (3) Plasticity in Rehabilitation
- POTH 603* (3) Directed Practicum
- POTH 604 (3) Current Topics in Pediatrics
- POTH 614 (2) Selected Topics in Rehabilitation Science
- POTH 618* (3) Topics in Rehabilitation
- POTH 620*** (3) Measurement: Rehabilitation 1
- POTH 622*** (3) Pathokinesiology
- POTH 630*** (3) Measurement: Rehabilitation 2
- POTH 631 (3) Research Proposal
- POTH 675 (3) Assessing Driving Ability 1
- POTH 676 (3) Driving Assessment Practicum
- POTH 677 (3) Retraining Driving Skills
- POTH 682 (3) Promoting Healthy Activity
- POTH 688 (3) Perception and Action

* Please note that courses are subject to change without prior notice.

** Not offered in 2009-2010

*** one of: POTH 620 or POTH 630 to be chosen

Group B, 15 credits, one of the following options:

Option 1, Directed Project:
- POTH 661 (7) Research Project 1
- POTH 662* (8) Research Project 2

Option 2:
- No directed project, 15 credits of graduate-level courses.

* Registration for these courses requires pre-approval by the Graduate Program Director.

Ph.D. in Rehabilitation Science

Doctoral students are required to pursue at least three years of full-time residence study.

The curriculum is divided as follows:

Required Courses (15 credits)
- POTH 610 * (4) Research Methodology
- POTH 614* (2) Selected Topics in Rehabilitation Science
- POTH 631 (3) Research Proposal
- EDPH 689 (3) Teaching and Learning in Higher Education
- EPB 507 * (3) Biostatistics for Health Professionals

Note: required if not already completed in a prior degree.

* Of the required courses, at least three will already have been completed by students with a M.Sc. in Rehabilitation Science from McGill.

Comprehensive Examination
- POTH 701 (0) Ph.D. Comprehensive

The student must successfully pass a written comprehensive examination (POTH 701) by the end of the first academic year. The format consists of several questions answered in essay style and submitted by deadlines set by the School.

Complementary Courses (3 credits)
- one of:
  - POTH 620 (3) Measurement in Rehabilitation 1
  - POTH 630 (3) Measurement in Rehabilitation 2
  - POTH 685 (3) Perception and Action

Elective Courses (3 - 6 credits)

Courses which pertain to the student's area of specialization: to be chosen from among graduate-level departmental course offerings or other courses at the 500, 600, or 700 level with permission of the Graduate Program Director.

Research Proposal

A research proposal is to be submitted in written form and defended in front of a supervisory committee. Research proposals should be completed during the second full-time year, following the comprehensive examination.

Thesis Component – Required

The student carries out a research study in an approved subject area under the guidance of an internal supervisor (from within the School) or an external supervisor (from outside the School). In the case of an external supervisor, an internal co-supervisor must be appointed. For successful completion of this requirement, the thesis must be defended orally.

64.6 Courses

Students preparing to register should consult Class Schedule on the web at www.mcgill.ca/student-records/register/class-schedule for the most up-to-date list of courses available; courses may have been added, rescheduled or cancelled after this Calendar was published. Class Schedule lists courses by term and includes days, times, locations, and names of instructors.

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

* Please note that courses are subject to change without prior notice.

POTH 508 PLASTICITY IN REHABILITATION. (3) (Winter) (Prerequisite: POTH 455 or equivalent.) A seminar course designed to provide students with a review of current research on plasticity in the central and peripheral nervous systems. Particular emphasis is placed on the mechanisms involved in the recovery of function after injury.

POTH 602 EDUCATIONAL METHODOLOGY. (3) (Course equivalent: EDPH 689) Process of learning, methods of communication and teaching strategies for classrooms and clinical settings.

POTH 603 DIRECTED PRACTICUM. (3) (Restriction: on-campus students only.) A tutorial with directed practical experience in a clinical setting related to the student's clinical specialization, including curriculum development, and emphasizing current thought in rehabilitation.

POTH 604 CURRENT TOPICS IN PEDIATRICS. (3) (Prerequisite: POTH 260, or permission of instructors.) This course will provide an overview of current research in pediatrics.

POTH 610 RESEARCH METHODOLOGY. (4) (Fall) (Corequisite: EPIB 507) Philosophy of scientific inquiry, principles of research design, and application of statistical techniques, focusing on research studies in health care and rehabilitation.

POTH 612 ADVANCED RESEARCH METHODS. (3) (Prerequisite: By permission of instructor(s)) Intermediate-advanced learning levels to help students design, implement, and analyze results according to the needs of their entry level professional master's projects.

POTH 614 SELECTED TOPICS IN REHABILITATION SCIENCE. (2) (Fall) (Restriction: on-campus students only.) A weekly lecture and seminar course taught by staff, designed to provide an overview of current research issues in rehabilitation.
POTH 616 SEMINARS IN REHABILITATION SCIENCE. (3) A weekly seminar course given by staff and invited speakers in different areas of research related to rehabilitation science. Students are expected to participate by reading pertinent literature prior to seminars and asking questions at each seminar. Attendance is compulsory, and the course is graded pass/fail based on participation.

POTH 617 REHABILITATION SEMINARS 1. (0) A weekly seminar course given by staff and invited speakers in different areas of research related to rehabilitation science. Students are expected to participate by reading pertinent literature prior to seminars and asking questions at each seminar. Attendance is compulsory, and the course is graded pass/fail based on participation.

POTH 618 TOPICS IN REHABILITATION. (3) This is a directed reading course on a topic in rehabilitation science. The student will acquire extensive knowledge in the topic of interest and understand the strengths and limitations of the current body of work in the area.

POTH 619 REHABILITATION SEMINARS 2. (0) (Restriction: During one academic year, students may not register for POTH 619 in the same term as POTH 616 or POTH 617.) Seminar course given by staff and invited speakers covering different areas of research related to rehabilitation science.

POTH 620 MEASUREMENT: REHABILITATION 1. (3) (Winter) (Prerequisite: POTH 222 and permission of instructor.) Theoretical and practical basis for use of quantitative equipment for measurement in rehabilitation research. Ambulatory devices, kinetic and kinematic data included.

POTH 624 MASTER'S PROJECT. (1) A weekly seminar course given by staff and invited speakers in different areas of research related to rehabilitation science. Students are expected to participate by reading pertinent literature prior to each seminar. Attendance is compulsory, and the course is graded pass/fail based on participation.

POTH 626 MEASUREMENT: REHABILITATION 2. (3) (Winter) (Prerequisite: POTH 222 and permission of instructor.) Theoretical and practical basis for utilization of electronic equipment for quantitative measurement in rehabilitation research. Ambulatory devices, electronic plates and instrumentation to assess normal and pathological human movement will be used to demonstrate the application of theory and techniques for quantitative analysis of human performance. Recording, reduction and analysis of electromyographic, kinetic and kinematic data included.

POTH 627 MEASUREMENT: REHABILITATION 3. (3) (Prerequisite: POTH 222 and permission of instructor.) Theoretical and practical basis for use of quantitative equipment for measurement in rehabilitation research. Ambulatory devices, kinetic and kinematic data included.

POTH 628 PROMOTING HEALTHY ACTIVITY. (3) (Prerequisites: M1 OT or PT and M2 OT students only.) Project is related to rehabilitation.

POTH 630 MEASUREMENT: REHABILITATION 1. (3) (Winter) (Prerequisite: POTH 222 and permission of instructor.) Theoretical and practical basis for use of quantitative equipment for measurement in rehabilitation research. Ambulatory devices, kinetic and kinematic data included.

POTH 632 RESEARCH ELECTIVE. (3) (Prerequisites: M1 OT or PT courses.) (Restriction: M2 OT & PT students only.) Project is related to rehabilitation.

POTH 633 FUNCTION/ACTIVITY IN ARTHRITIS. (3) (Prerequisites: OCC1 545, GCC1 549, GCC1 548.) (Restrictions: OT & PT students only.) Multidisciplinary approach to assessment and treatment of clients with complex rheumatic diseases.

POTH 634 CHILDHOOD PERFORMANCE ISSUES. (3) (Prerequisites: M1 and Fall M2 courses.) (Restrictions: M2 OT students only. Not open to students who have taken POTH 403.) Specialized interventions of the occupational therapist in developmental pediatrics.

POTH 635 CANCER REHABILITATION. (3) (Prerequisites: PHTH 550, PHTH 551, PHTH 552, PHTH 561, PHTH 520, PHTH 623.) Cancer pathology, risk stratification, the treatment process and rehabilitation needs throughout the disease trajectory.

POTH 636 PROMOTING WELLNESS OF SENIORS. (3) (Prerequisites: M1 and M2 Fall OT and PT courses.) (Restrictions: OT and PT students only.) The complexity of rehabilitation interviews with the geriatric client, the various causes of occupational performance dysfunction, and the structure and organization of geriatric health care delivery are addressed.

POTH 640 ROLE-EMERGING MANAGEMENT. (3) (Restriction: OT students only.) Career opportunities in private practice and/new domains for Occupational Therapists, including small business management, legal and liability considerations, managing organizational growth and service marketing.

POTH 661 RESEARCH PROJECT 1. (7) (Restriction: Campus students only.)

POTH 662 RESEARCH PROJECT 2. (8)

POTH 667 DRIVING ASSESSMENT PRACTICUM. (3) (Prerequisite: POTH 674.) (Restriction: This course is restricted to Occupational Therapists who have successfully completed POTH 674. It is available in both French and English and includes a 5-day intensive workshop.) Directed practical experience in a clinical setting that focuses on driving evaluations.

POTH 668 PROMOTING HEALTHY ACTIVITY. (3) (Winter) Individual and situational determinants of health behaviours will be examined across the lifespan and in clinical populations. Application of behaviour change theories for the design, implementation and evaluation of health behaviour interventions will be discussed. Strategies to facilitate behaviour change and adherence across the lifespan will be emphasized.

POTH 685 PERCEPTION AND ACTION. (3) (Fall) (Prerequisite(s): POTH 455 or PHGY201 or equivalent) New research concepts related to perception and action, with a special emphasis on the understanding of motor behaviour in patient populations and the exploration of potential applications in rehabilitation.

POTH 696 THESIS RESEARCH. (2)

POTH 697 THESIS RESEARCH 1. (6)

POTH 697D1 (3), POTH 697D2 (3) THESIS RESEARCH. (3) (Prerequisites: M1 OT or PT and M2 OT students only.) Project is related to rehabilitation.

POTH 698 THESIS RESEARCH 2. (9)

POTH 698D1 (4.5), POTH 698D2 (4.5) THESIS RESEARCH. (3) (Restrictions: Primarily designed for Occupational Therapists. Individuals from other disciplines may be considered on a case by case basis.) Principles of assessment of driving performance in several at-risk populations.
PHTH 692D1 (6). PHTH 692D2 (6) THESIS RESEARCH 3. (Students must register for both PHTH 692D1 and PHTH 692D2) (No credit will be given for this course unless both PHTH 692D1 and PHTH 692D2 are successfully completed in consecutive terms) (PHTH 692D1 and PHTH 692D2 together are equivalent to PHTH 699)

PHTH 701 Ph.D. Comprehensive. (0)

PHTH 571 PT CLINICAL PRACTICUM 1. (7) (Prerequisite: PHTH 550, PHTH 551, PHTH 552, PHTH 560, PHTH 561.) A first clinical practicum course.

PHTH 572 PT CLINICAL PRACTICUM 2. (7) (Prerequisite: PHTH 571.) A second clinical practicum including advanced skills in assessment and treatment management in a core area of practice.

PHTH 573 PT CLINICAL PRACTICUM 3. (7) (Prerequisite: PHTH 571, PHTH 572.) Advanced assessment and treatment management in an area of practice.

PHTH 620 PT CLINICAL PRACTICUM 4. (7) (Prerequisite: PHTH 571, PHTH 572, PHTH 573.) Final clinical practicum in an area of practice.

PHTH 622 INTEGRATED PAIN MANAGEMENT. (3) (Prerequisites: Clinical Affiliation 1 & 2 or permission of instructor. PHTH 552, PHTH 561.) Assessment and treatment of chronic pain syndromes.

PHTH 623 DIFFERENTIAL DIAGNOSIS AND MANAGEMENT. (3) (Prerequisites: PHTH 550, PHTH 560.) Building on previously learned orthopaedic knowledge, screening for medical conditions and establishing functional differential diagnosis.

PHTH 661 SPORT PHYSIOTHERAPY. (3) (Prerequisites: PHTH 550, PHTH 560.) Injury prevention for recreational and elite athletes and rehabilitation of injured athletes.

PHTH 662 ADVANCED MANUAL THERAPY. (3) (Prerequisites: PHTH 551, PHTH 552, PHTH 623.) Use of manual therapy in the assessment and treatment of patients with musculoskeletal disorders.

65 Physics

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Ernest Rutherford Physics Building
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Fax: 514-398-8434
Email: graduate.physics@mcgill.ca
Website: www.physics.mcgill.ca

Chair — C. Gale
Director of Graduate Studies — S. Jeon
Associate Director of Graduate Studies — D. Hanna

65.1 Staff

Emeritus Professors
S. Das Gupta; B.Sc., M.Sc.(Calc.), Ph.D.(McG.) (Macdonald Emeritus Professor of Physics)
N.B. DeTakacsy; B.Sc., M.Sc.(Montr.), Ph.D.(McG.)
M.P. Langleben; B.Sc., M.Sc., Ph.D.(McG.), F.R.S.C.
C.S. Lam; B.Sc.(McG.), Ph.D.(MIT)
S.K. Mark; B.Sc., M.Sc., Ph.D.(McG.) (Macdonald Emeritus Professor of Physics)
D.G. Stairs; B.Sc., M.Sc.(Qu.), Ph.D.(Harv.) (Macdonald Emeritus Professor of Physics)
J.O. Strom-Olsen; B.A., M.S., Ph.D.(Camb.)
M.J. Zuckermann; M.A., D.Phil.(Oxf.), F.R.S.C.

Post-Retirement Professors
J.E. Crawford; B.A., M.A.(Tor.), Ph.D.(McG.)

J.K.P. Lee; B.Eng., M.Sc., Ph.D.(McG.)
R.B. Moore; B.Eng., M.Sc., Ph.D.(McG.)
P.M. Patel; B.Sc., M.Sc.(Manc.), Ph.D.(Harv.)

Professors
J. Barrette; M.Sc., Ph.D.(Montr.)
J. Brandenberger; Dip.(ETH), A.M., Ph.D.(Harv.) (Canada Research Chair)
J. Cline; B.S.(Harvey Mudd), M.Sc., Ph.D.(Cal. Tech.)
F. Corriveau; B.Sc.(Laval), M.Sc.(Br. Col.), Ph.D.(ETH)
C. Gale; B.Sc.(Ott.), M.Sc., Ph.D.(McG.) (James McGill Professor)
M. Grant; B.Sc.(PEI), M.Sc., Ph.D.(Tor.), F.R.S.C. (James McGill Professor)
P. Gutter; Dip., Ph.D.(Basel), F.R.S.C. (James McGill Professor)
H. Guo; B.Sc.(Sichuan), M.Sc., Ph.D.(Pitt.), F.R.S.C. (James McGill Professor)

D. Hanna; B.Sc.(McG.), A.M., Ph.D.(Harv.) (Macdonald Professor of Physics)
R. Harris; B.A.(Oxf.), Ph.D.(Sus.)
V. Kaspi; B.Sc.(McG.), M.A., Ph.D.(Prin.), F.R.S.C. (Canada Research Chair) (Lorne Trotter Chair in Astrophysics and Cosmology)
S. Lovejoy; B.Sc.(Camb.), Ph.D.(McG)
K. Ragan; B.Sc.(Alta.), Ph.D.(Geneva) (Macdonald Professor of Physics)
D.H. Ryan; B.A., Ph.D.(Dub.)
M. Sutton; B.Sc., M.Sc., Ph.D.(Tor.) (Rutherford Chair in Physics)
J. Vinals; B.Sc., M.Sc., Ph.D.(Barcelona) (Canada Research Chair)

Associate Professors
A. Clerk; B.Sc.(Tor.), Ph.D.(C'nell) (Canada Research Chair)
A. Cumming; B.A.(Camb.), Ph.D.(Calif., Berk.)
M. Hilke; B.Sc., M.Sc., Ph.D.(Geneva)
S. Jeon; B.Sc.(Seoul National), M.Sc., Ph.D.(Wash.)
G. Moore; B.S(Harvey Mudd), Ph.D.(Prin.)
S. Robertson; B.Sc.(Calg.), M.Sc., Ph.D.(Vic. (BC))
B. Vachon; B.Sc.(McG), Ph.D.(Vic. (BC)) (Canada Research Chair)
A. Warburton; B.Sc.(Vic. (BC)), Ph.D.(Tor.)
P. Wiseman; B.Sc.(St. FX), Ph.D.(W. Ont.) (joint appt. with Chemistry)

Assistant Professors
K. Dasgupta; M.Sc., Ph.D.(TIFR)
M. Dobbs; B.Sc.(McG.), Ph.D.(Vic. (BC)) (Canada Research Chair)
G. Gervais; B.Sc.(Sher.), M.Sc.(McM.), Ph.D.(N'western)
G. Holder; B.Sc., M.Sc.(Qu.), Ph.D.(Chic.) (Canada Research Chair)
M. Killof; B.Sc.(New Br.), M.Sc., Ph.D.(Nfld.)
A. Maloney; B.S., M.S.(Stan.), Ph.D.(Harv.) (William Dawson Scholar)
W. Reissner; B.A.(Reed), Ph.D.(Prin.)
R. Rutledge; B.Sc.(S. Calif.), Ph.D.(MIT)
B. Siwick; B.Sc., M.Sc., Ph.D.(Tor.) (Canada Research Chair) (joint appt. with Chemistry)
T. Webb; B.Sc.(Tor.), M.Sc.(McM.), Ph.D.(Tor.)

Lecturers
Z. Altounian, F. Buchinger

Associate Members
M. Chacon (Physiology), K. Gehring (Biochemistry), P. Hayden (Computer Science), M. Mackey (Physiology), Z. Mi (Electrical and Computer Engineering), J. Nadeau (Biomedical Engineering), E. Podgorsak (Medical Physics), D. Rassier (Kinesiology), D. Ronis (Chemistry), J. Seuntjens (Medical Physics), T. Szkopek (Electrical and Computer Engineering), F. Verhaegen (Medical Physics)

Adjunct Professors
65.2 Programs Offered
M.Sc. and Ph.D.

FIELDS OF RESEARCH

High Energy Physics

Theoretical: The McGill high energy theorists have interests in a wide range of areas within quantum field theory, string theory, quantum gravity and cosmology. Research areas of the high energy theory faculty include applications of quantum field theory techniques to relativistic heavy ion collisions, baryogenesis, superstring cosmology, theory of cosmological perturbations, black hole physics, supergravity, three dimensional gravity, and various topics related to the physics and mathematics of superstring theory. The high energy theorists have close connections to the nuclear theory group, the astrophysics group, the high energy experimentalists, and to members of the Mathematics department.

Experimental: The experimental high energy physics group is engaged in a number of experiments at the research frontiers of the field, both in subatomic physics and in high energy astrophysics. These include:
- Electron-positron collisions: A group works on the BaBar experiment at SLAC and R&D for the proposed SuperB experiment at LNF in Italy, with specific interest in CKM matrix elements and physics beyond the Standard Model through studies of rare decays, and on R&D for a future International Linear Collider, with interest in calorimeter development.
- Electron-proton collisions: A group is studying high-energy lepton-quark interactions using data from the ZEUS experiment at DESY in Hamburg, with interest in deep inelastic scattering and flavour production.
- Hadron-hadron collisions: CDF and Dzero groups employ Fermilab's energy frontier Tevatron proton-antiproton accelerator to study top and bottom quarks and search for the Higgs boson. A group is also involved in major contributions to the next energy frontier at CERN's LHC, with work on the High Level Trigger for the ATLAS experiment.
- High-energy particle astrophysics: ground-based gamma-ray astronomy using the newly commissioned VERITAS telescope array and development of the next-generation detector.

Students at the M.Sc. and Ph.D. levels are offered a strong program of research in a challenging and rapidly advancing field. Short term master's projects are based mainly on instrumentation or data analysis conducted on campus, while Ph.D. research may involve an extended stay at one of the world's major research laboratories.

Nuclear Physics

Theoretical: Current research programs include transport equations for heavy ion collisions at intermediate energy; nuclear equation of state from heavy ion collisions; fragmentation at intermediate energy; electromagnetic probes in relativistic heavy ion collisions; effective Lagrangians for hadronic systems at finite temperature; Quark-Gluon Plasma, QCD.

Experimental: Current research programs in experimental nuclear physics at McGill are focussed on two main axes:
- The study of heavy-ion reactions at relativistic energies to determine the properties of nuclear matter at high temperatures and densities. This program is being performed at the Brookhaven National Laboratory, and at the Large Hadron Collider facility at CERN.
- The study of ground state properties of unstable nuclei using laser spectroscopy techniques and ion traps. This work is being carried out using the Canadian Penning trap facility at the Argonne National Laboratory and at the accelerator ISOLDE (CERN), and the ISAC facility at TRIUMF.

Furthermore, the Nuclear Physics Group has an active inhouse research program that applies the ion trap and laser techniques to the detection of trace quantities of material and contaminants, and to ion spectroscopy.

Condensed Matter Physics

Theoretical: Current research programs involve the nonequilibrium, ab-initio modelling of molecular and nanoelectronic systems and devices; the study of quantum effects in interacting mesoscopic electron systems; nonequilibrium phenomena in extended systems; and applications of statistical mechanics to problems in biophysics.

Experimental: Current research programs involve the study of the time evolution of non-equilibrium systems via x-ray diffraction, fundamental quantum properties of strongly-correlated systems at temperatures very near absolute zero, macromolecular interactions in living cells using single photon and two-photon imaging, molecular electronics and nanoelectronic systems by scanning probe microscopy, dynamics and mechanical properties of soft matter systems and spatial organization and dynamics in living cells, mechanical behavior of very small systems by high-resolution force microscopy, electronic properties which emerge at the limits of miniaturization and quantum computing, and nuclear methods to study interactions in magnetic materials that lead to exotic magnetic ordering behaviour. This includes studies of novel materials such as carbon nanotubes, graphene, unconventional superconductors, quantum dots, heterostructures, amorphous systems and spin glasses.

Astrophysics

Research in the astrophysics group covers a wide range of topics including cosmology, galaxy formation, high energy astrophysics, and extrasolar planets. This involves observations at all wave-lengths, from gamma rays and X-rays to sub-mm, infrared and radio, using international observatories in space and on the ground. Experimental groups at McGill are involved in development and operation of ground-based high energy gamma-ray observatories, and cosmic microwave background experiments. Theoretical work includes studies of how astrophysics and observational cosmology can experimentally determine the most important properties of dark matter and dark energy, studies of the diverse physics of neutron stars, and extrasolar planet formation.

Nonlinear Variability in Geophysics

This group studies nonlinear dynamical processes in the atmosphere and other geophysical systems, especially those associated with turbulent, chaotic and extremely variable behaviour. Emphasis is placed on multifractal analysis and modelling as well as the development of new theories and techniques covering wide ranges of scale in time and space. Data from a variety of in situ and remotely sensed sources are used. This includes satellite data of the Earth's atmosphere and surface as well as high quality precipitation data from the McGill Radar Weather Observatory.

65.3 Admission Requirements

M.Sc.

Normal requirement is a B.Sc. in Physics or equivalent, with high standing.

Ph.D.

Normal requirement is an M.Sc. in Physics or equivalent. Candidates in good standing may have the option of transferring into this program from the M.Sc. program after one year.

65.4 Application Procedures

An application package is available upon request. It includes a brochure with a detailed description of the research activities in the department. Inquiries should be addressed to the Graduate Coordinator (Paula Domingues, Department of Physics). Please also
Applications will be considered upon receipt of:

1. application form;
2. two official transcripts;
3. two letters of reference written on institutional letterhead paper;
4. $100 application fee;
5. test result: TOEFL (minimum score 550 on the paper-based test, 213 on the computer-based test or 86 on the internet-based test, with each component score not less than 20) or IELTS (minimum score 6.5).

Financial assistance will be offered to students in the form of a bursary, teaching and research assistantships. For new students, financial support will be offered at the time of acceptance. Forms are given and filled out on registration day.

**Thesis Component – Required**

15 credits, five 3-credit graduate-level PHYS courses.

**Complementary Courses**

- PHYS 691 (3) Thesis Preparation
- PHYS 692 (6) Thesis Project
- PHYS 690 (24) M.Sc. Thesis

Candidates must also successfully complete all the other normal requirements of Graduate and Postdoctoral Studies.

**Program Requirements**

- M.Sc. in Physics (Thesis) (48 credits)
- Complementary Courses (15 credits)
- Thesis Component – Required (33 credits)

**Ph.D.**

Candidates must successfully complete two one-term courses and the preliminary examination (PHYS 700) and submit a Ph.D. thesis, in addition to all the normal requirements of Graduate and Postdoctoral Studies. (Courses taken as part of the M.Sc. program at McGill may be accepted as substitutes for the two required courses.) Normally one of the courses must be a 600- or 700-level course in the candidate’s area of specialization.

**Courses**

- PHYS 514 General Relativity. (3) (Winter) (3 hours) A quantitative course in galactic and extragalactic astrophysics. Topics include observational techniques, stars and stellar evolution, compact objects, galaxy structure, kinematics, evolution and cosmology.
- PHYS 521 Astrophysics. (3) (Fall) (3 hours) A quantitative course in galactic and extragalactic astrophysics. Topics include observational techniques, stars and stellar evolution, compact objects, galaxy structure, kinematics, evolution and cosmology.
- PHYS 534 Nanoscience and Nanotechnology. (3) (Fall) Topics include scanning probe microscopy, chemical self-assembly, computer modelling, and microfabrication/micromachining.
- PHYS 551 Quantum Theory. (3) (Fall) (3 hours lectures) (Restriction: Honours students, or permission of the instructor) General formulation, scattering theory, WKBJ approximation, time-dependent perturbation, theory and applications, angular momentum, relativistic wave equations.
- PHYS 557 Nuclear Physics. (3) (Fall) (3 hours lectures) (Restriction: Honours students, or permission of the instructor) General nuclear properties, nucleon-nucleon interaction and scattering theory, radioactivity, nuclear models, nuclear reactions.
- PHYS 558 Solid State Physics. (3) (Fall) (3 hours lectures) (Restriction: Honours students, or permission of the instructor) Properties of crystals; free electron model, band structure; metals, insulators and semi-conductors; phonons; magnetism; selected additional topics in solid-state (e.g. ferroelectrics, elementary transport theory).
- PHYS 559 Advanced Statistical Mechanics. (3) (Fall) (3 hours lectures) (Restriction: Honours students, or permission of the instructor) Statistical mechanics and statistical mechanics; correlation functions (static); mean field theory; critical phenomena; broken symmetry; fluctuations, roughening.
- PHYS 562 Electromagnetic Theory. (3) (Winter) (3 hours lectures) (Restriction: Honours students, or permission of the instructor) Electrodynamics and statistical mechanics; correlation functions (static); mean field theory; critical phenomena; broken symmetry; fluctuations, roughening.
- PHYS 567 Particle Physics. (3) (Winter) (3 hours lectures) (Restriction: Honours students, or permission of the instructor) Survey of elementary particles; hadrons, leptons and hadrons' constituents (quarks). Invariance principles and conservation laws. Detectors and accelerators. Phenomenology of strong, electromagnetic and weak interactions.
- PHYS 580 Introduction to String Theory. (3) (Fall) (Prerequisites: Phyiscs 447 or permission of instructor) Introduction to bosonic string theory, with application to fundamental theories of particle physics. Gravity and electromagnetism in extra dimensions, dynamics of classical and quantum strings, worldsheet parametrization, conserved currents, light-cone gauge, string thermodynamics and black holes, D-branes.
- PHYS 606 Selected Topics: Cont. Physics 1. (3)
- PHYS 607 Selected Topics: Cont. Physics 2. (3)
- PHYS 616 Multifractals and Turbulence. (3) (3 hours) This course assumes knowledge of basic probability theory and Fourier analysis. The subjects covered are: scale-invariant sets: fractal geometry, scale-invariant fields: multifractal fields and processes, aspects of hydrodynamic turbulence, multifractal data analysis techniques, generalized scale invariance, space/time scaling, causality.
- PHYS 620 Experimental Methods of Subatomic Physics. (3) (3 hours) Basic techniques of experimentation in nuclear and particle physics. Accelerators, beam optics, detection systems, major experiments, Monte-Carlo simulation, data acquisition and data analysis.
PHYS 632 SEMINAR IN ASTROPHYSICS 1. (3) (Restrictions: Enrolled in M.Sc. or Ph.D. degree program or permission of instructor. Not open to students who have taken PHYS 614.) Seminar on special topics in astrophysics.

PHYS 633 SEMINAR IN ASTROPHYSICS 2. (3) (Restrictions: Enrolled in M.Sc. or Ph.D. degree program or permission of instructor. Not open to students who have taken PHYS 615.) Seminar on special topics in astrophysics.

PHYS 634 SEMINAR IN ADVANCED MATERIALS. (3) (3 hours) A series of research-level seminars about topics of current interest in advanced materials. Topics include molecular and nanoelectronic, computational approaches to materials design and property predictions, new techniques in molecular and atomic imaging, advances in materials preparation, quantum device and quantum computing.

PHYS 641 OBSERVATIONAL TECHNIQUES OF MODERN ASTROPHYSICS. (3) (Restriction: Enrolment in M.Sc. or Ph.D. program, or permission of the instructor.) Mechanical, electrical, optical, and analytical techniques used in modern astrophysics research. Electromagnetic, gravitational and particle-based observing. Relevant and topical observational problems, contact with forefront of observational research.

PHYS 642 RADIATIVE PROCESSES IN ASTROPHYSICS. (3) (Restriction: Enrolment in M.Sc./Ph.D. program, or permission of the instructor.) Why astrophysical sources look the way they do, and how to understand why we see what we see in astronomy. Fundamental physical processes that produce and modify radiation from astrophysical sources, and how they apply to different astronomical examples.

PHYS 643 ASTROPHYSICAL FLUIDS. (3) (Restriction: Enrolment in M.Sc./Ph.D. program, or permission of the instructor.) Physics of astrophysical fluids; how it determines the behaviour, formation, evolution, dissipation and death of astrophysical systems, including objects in hydrostatic balance, such as stars, or with inflows and outflows, such as disks and jets.

PHYS 644 GALAXIES AND COSMOLOGY. (3) (Restriction: Enrolment in M.Sc./Ph.D. program, or permission of the instructor.) (Note: General relativity not a prerequisite.) Our current understanding of the universe, and tools that are used in developing this understanding. Large scale properties of galaxies in a cosmological context; the most important features of the expanding universe.

PHYS 645 HIGH ENERGY ASTROPHYSICS. (3) (Restrictions: Enrolled in M.Sc. or Ph.D. degree program or permission of instructor. Not open to students who have taken PHYS 621.) Physical bases for phenomena associated with strong gravity and high-energy processes in astrophysical contexts. X-rays, gamma-rays, nuclear processes, strong gravity and magnetic fields. Shocks, acceleration, and jets.


PHYS 659 EXPERIMENTAL CONDENSED MATTER. (3) (3 hours) To obtain an active understanding of the principles, the possibilities and the limitations of various experimental techniques. Possible topics include vacuum and low-temperature techniques; transport, thermal, magnetization and de Haas van Alphen measurements; scattering techniques; Mossbauer spectroscopy, NMR, scanning probe microscopy, electron microscopy; surface science methods.


PHYS 673 QUANTUM FIELD THEORY 2. (3) (Prerequisite: PHYS 610 or permission of instructor.) Loop diagrams, renormalization, Abelian and nonabelian gauge theory, QCD, introduction to the Standard Model.

PHYS 690 M.SC. THESIS. (24)

PHYS 690D1 (12), PHYS 690D2 (12) M.SC. THESIS. (Students must register for both PHYS 690D1 and PHYS 690D2) (No credit will be given for this course unless both PHYS 690D1 and PHYS 690D2 are successfully completed in consecutive terms) (PHYS 690D1 and PHYS 690D2 together are equivalent to PHYS 690)

PHYS 691 THESIS PREPARATION. (3) Directed study of research papers and experimental or theoretical techniques in the student's designated area of research under the supervision of the graduate studies committee of the Department.

PHYS 692 THESIS PROJECT. (6) Independent work under the direction of the student's supervisor on a research problem in the student's designated area of research leading to a project report or seminar.

PHYS 692D1 (3), PHYS 692D2 (3) THESIS PROJECT. (Students must register for both PHYS 692D1 and PHYS 692D2) (No credit will be given for this course unless both PHYS 692D1 and PHYS 692D2 are successfully completed in consecutive terms) (PHYS 692D1 and PHYS 692D2 together are equivalent to PHYS 692) Independent work under the direction of the student's supervisor on a research problem in the student's designated area of research leading to a project report or seminar.

PHYS 700 PRELIMINARY PH.D. EXAMINATION. (0)

PHYS 717 MANY-BODY PHYSICS. (3) Real-time and imaginary-time Green functions; Diagrammatic perturbation theory; Quantum linear response and Kubo formulae; Path-integral techniques; Fermi gas; Impurity averaging; Interacting electron gas; Magnetism; Phonons & electron-phonon interaction; Superconductivity; Luttinger liquids.

PHYS 718 SPECIAL TOPICS: SOLID STATE PHYSICS 1. (3) (3 hours) Specialized discussion of some current problems in solid state physics.

PHYS 719 SPECIAL TOPICS: SOLID STATE PHYSICS 2. (3) (3 hours) Specialized discussion of some current problems in solid state physics.

PHYS 729 SPECIAL TOPICS IN NUCLEAR PHYSICS. (3) Specialized discussion of some current problems in nuclear physics.

PHYS 730 SPECIAL TOPICS: HIGH ENERGY PHYSICS 1. (3) (3 hours) Specialized discussion of some current problems in theoretical particle physics.

PHYS 731 SPECIAL TOPICS: HIGH ENERGY PHYSICS 2. (3) (3 hours) Specialized discussion of some current problems in theoretical particle physics.

PHYS 732 TOPICS IN ASTROPHYSICS 1. (3) (Prerequisites: PHYS 521 or permission of instructor) Current astrophysical topics.

PHYS 733 TOPICS IN ASTROPHYSICS 2. (3) (Prerequisites: PHYS 521 or permission of instructor) Current astrophysical topics.

PHYS 741 SUPERSTRING THEORY. (3) (Prerequisite: PHYS 610.) Introduction to the main concepts and tools of modern string theory. Overview of the perturbative worldsheet description of bosonic and supersymmetric string theories. Various concepts in two dimensional conformal field theory. Introduction to the non-perturbative physics of string theory, including D-branes, compactifications and duality.

PHYS 742 INTRODUCTION TO THE STANDARD MODEL. (3) (Prerequisite: PHYS 610.) Introduction to the Standard Model of Particle Physics. Review of field theory preliminaries. Phenomenology such as decay of Z and W bosons, heavy lepton decay, scattering and the Z resonance, with development of computational methods as needed. Effective field theories, bound states in QCD, QCD interactions and possible extension of the standard model.
PHYS 743 VERY EARLY UNIVERSE. (3) (Prerequisite: PHYS 514, General Relativity.) (Corequisite: PHYS 610, Quantum Field Theory 1.) Introduction to key tools used in current research in theoretical cosmology, including (i) Review of Standard Big Bang Cosmology, (ii) Inflationary Universe Models, (iii) Theory of Cosmological Perturbations, (iv) Quantum Field Theory Methods of Cosmology. (v) Topological Defects in Cosmology, (vi) Superstring Cosmology.

PHYS 744 FINITE TEMPERATURE FIELD THEORY. (3) (Prerequisite: PHYS 610.) Tools of finite temperature (relativistic) field theory. Thermodynamics, introducing bosonic and fermionic Euclidean path integrals. Pressure in a free theory, the perturbative expansion, thermal masses, and symmetry restoration. Schwinger-Keldysh contour path integral and its perturbative expansion. Collective phenomena such as dispersion corrections, plasma oscillations, Debye screening and Landau damping.

PHYS 745 SUPERSYMMETRY AND SUPERGRAVITY. (3) (Prerequisite: PHYS 610.) Introduction to supersymmetry and supergravity, including the Minimal Supersymmetric Standard Model (MSSM). Basic formalism of supersymmetry (SUSY) transformations and the superfield formalism, simple SUSY models, the MSSM and its phenomenology, mechanisms for breaking supersymmetry, introduction to 4-D supergravity.

66 Physiology
Department of Physiology
McIntyre Medical Sciences Building
3655 Promenade Sir-William-Osler
Montreal, QC H3G 1Y6
Canada
Telephone: 514-398-4343
Fax: 514-398-7452
Website: www.medicine.mcgill.ca/physio
Chair — John Orlowski
Graduate Program Director — Kathleen Cullen

66.1 Staff
Emeritus Professors
Kresimir Krnjevic; O.C., B.Sc., Ph.D., M.B., Ch.B.(Edin.), F.R.S.C.
Geoffrey Melvill Jones; B.A., M.A., M.B., Ch.B.(Edin.), F.R.S.C.
Kresimir Krnjevic; O.C., B.Sc., Ph.D., M.B., Ch.B.(Edin.), F.R.S.C.

Professors
Munroo W. Cohen; B.Sc., Ph.D.(McG.)
Ellis J. Cooper; B.Eng (Sir G. Wms.), M.Sc.(Surr.), Ph.D.(McM.)
Kathleen Cullen; B.Sc.(Brown), Ph.D.(Chic.) (William Dawson Scholar)
Leon Glass; B.S.(Brooklyn), Ph.D.(Chic.) (Isadore Rosenfield Professor of Cardiology)
Phil Gold; M.Sc., Ph.D., M.D.,C.M.(McG.), F.R.C.P.(C) (joint appt. with Medicine)
David Goltzman; B.Sc., M.D.,C.M.(McG.), F.R.C.P.(C) (Antoine G Massabki Professor of Medicine) (joint appt. with Medicine)
John Hanrahan; Ph.D.(Br. Col.)
Mortimer Levy; B.Sc., M.D.,C.M.(McG.), F.R.C.P.(C) (joint appt. with Medicine)
Gergely Lukacs; M.D., Ph.D.(Budapest)
Michael Mackey; B.A., Ph.D.(Wash.) (Joseph Morley Drake Professor of Physiology)
Jacapo P. Mortola; M.D.(Milan)
John Orlowski; B.Sc.(McG.), M.Sc., Ph.D.(M.R.)(James McGill Professor)
Premsyl Ponka; M.D., Ph.D.(Prague)
Alvin Shrier; B.Sc.(C'dia), Ph.D.(Dal.) (Hosmer Professor of Physiology)
Douglas G.D. Watt; M.D., Ph.D.(McG.)
John White; B.Sc., M.Sc.(Car.), Ph.D.(Harv.)

Associate Professors
Riaz Farookhi; B.Sc., M.Sc.(MIT), Ph.D.(Tufts)
Milan Glavinovic; B.Sc.(Zagreb), M.Sc.(Tor.), Ph.D.(McG.)
Michael Guevara; Ph.D.(McG.)
Sheldon Magder; M.D.(Tor.) (joint appt. with Medicine)
Ursula Stochaj; Ph.D.(Cologne)
Teresa Trippenbach; M.D., Ph.D.(Warsaw)
Ann Wechsler; B.A.(Tor.), M.Sc., Ph.D.(McG.)

Assistant Professors
Erik Cook; Ph.D.(Baylor College, Tx)
Maurice Chacron; Ph.D.(Ott.)
Pejmun Haghigi; Ph.D.(McG.)
Russell Jones; Ph.D.(Tor.)
Julius Martinez-Trujillo; Ph.D.(Tübingen)

Adjunct Professors
Nicole Bernard; B.Sc.(McG.), Ph.D.(Duke)

66.2 Programs Offered
The Physiology Department offers training leading to M.Sc. and Ph.D. degrees. The scope of the ongoing research, and close connections with the McGill teaching hospitals, offer excellent opportunities for collaborations with hospital-based scientists. All graduate students in Physiology receive financial support. Any faculty member who agrees to supervise a student who does not hold a fellowship, is obliged to provide financial support.

66.3 Admission Requirements
Admission to the Graduate Program is based on an evaluation by the Graduate Student Admissions and Advisory Committee (GSAAC), and on being accepted by a research supervisor. Final acceptance is contingent upon approval of the recommendation of the applicant by Graduate and Postdoctoral Studies, from whom official notification will be received.

Candidates for the M.Sc. degree must hold a B.Sc. degree or its equivalent. Candidates who have completed an M.Sc. may be admitted directly to the Ph.D. program. M.Sc. students interested in a Ph.D., may transfer to the Ph.D. program after 12-18 months, if all of the transfer requirements have been fulfilled. The M.Sc. thesis requirement is then waived. Candidates with exceptional
academic records may be considered to proceed directly to the Ph.D. degree from the B.Sc. degree.

The GRE General Test is required for anyone who does not have a degree from a North American University. TOEFL: only those whose mother tongue is English, who graduated from a Canadian institution (anglophone or francophone) or who completed an undergraduate or graduate degree at a foreign institution where English is the language of instruction are exempt from providing proof of competency in English. A minimum CGPA of 3.2 or a GPA of 3.4 in the last two years is required for an application to be considered.

66.4 Application Procedures

The GSAAC will only consider applications upon receipt of all of the following documentation:
1. application form;
2. personal statement;
3. CV;
4. two letters of reference, not more than six months old, from two professors printed on official letterhead;
5. two official copies of all university transcripts;
6. $100 application fee;
7. results of the GRE (Graduate Record Exam) General Test, for applicants whose undergraduate degree is not from a North American university;
8. results of the Test of English as a Foreign Language (TOEFL), minimum score of 600 on paper-based test (or 250 on computer-based test, or 100 on the internet-based test with each component score not less than 20); only those whose mother tongue is English, who graduated from a Canadian institution (anglophone or francophone), or who completed an undergraduate or graduate degree at a foreign institution where English is the language of instruction will be exempt from providing proof of competency in English.

Applications should be submitted to the Graduate Student Affairs Coordinator as early as possible in order to facilitate processing. However, no applications will be considered after the dates for guaranteed consideration.

Dates for Guaranteed Consideration

For dates for guaranteed consideration, please consult the following website: www.mcgill.ca/gradapplicants/apply. Interested candidates should refer to the Department's website: www.medicine.mcgill.ca/physio.

McGill’s online application form for graduate program candidates is available at www.mcgill.ca/gradapplicants/apply.

66.5 Program Requirements

M.Sc. in Physiology (Thesis) (49 credits)

Each student will have a supervisory committee which will monitor the progress of the studies. In addition to those specified below, students may be requested to fulfill other course requirements.

The required thesis is usually equivalent to one first author paper.

Required Courses (13 credits)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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<tbody>
<tr>
<td>PHGY 601</td>
<td>M.Sc. Proposal Seminar</td>
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<tr>
<td>PHGY 602</td>
<td>Literature Search and Research Proposal</td>
</tr>
<tr>
<td>PHGY 607</td>
<td>Laboratory Research 1</td>
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<tr>
<td>PHGY 608</td>
<td>Laboratory Research 2</td>
</tr>
<tr>
<td>PHGY 620</td>
<td>Progress in Research</td>
</tr>
</tbody>
</table>

Ph.D. in Physiology – Bioinformatics Option/Concentration (49 credits)

In addition to the above, students must select 6 approved credits in Physiology or Science at the 500 level and higher.

Transfer to the Ph.D. Program

Between 12-18 months, students may transfer to the Ph.D. program if all of the transfer requirements have been fulfilled. This includes completion of the Ph.D. Preliminary Exam and the successful completion of a transfer seminar. The M.Sc. thesis requirement is then waived.

M.Sc. in Physiology – Bioinformatics Option/Concentration (49 credits)

Required Courses (16 credits)

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<tr>
<th>Course</th>
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<tr>
<td>COMP 616</td>
<td>Bioinformatics Seminar</td>
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<tr>
<td>PHGY 601</td>
<td>M.Sc. Proposal Seminar</td>
</tr>
<tr>
<td>PHGY 602</td>
<td>Literature Search and Research Proposal</td>
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<tr>
<td>PHGY 603</td>
<td>Systems Biology and Biophysics</td>
</tr>
<tr>
<td>PHGY 607</td>
<td>Laboratory Research 1</td>
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<tr>
<td>PHGY 608</td>
<td>Laboratory Research 2</td>
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</table>

Thesis Component – Required (30 credits)

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<th>Course</th>
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<tbody>
<tr>
<td>PHGY 621</td>
<td>Thesis 1</td>
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<tr>
<td>PHGY 622</td>
<td>Thesis 2</td>
</tr>
<tr>
<td>PHGY 623</td>
<td>M.Sc. Seminar</td>
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Elective Courses (6 credits)

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<th>Course</th>
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<tbody>
<tr>
<td>PHGY 624</td>
<td>M.Sc. Seminar</td>
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Ph.D. in Physiology – Bioinformatics Option/Concentration

Required Courses (16 credits)

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<td>Systems Biology and Biophysics</td>
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<tr>
<td>PHGY 702</td>
<td>Ph.D. Proposal</td>
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<td>PHGY 703</td>
<td>Ph.D. Progress Seminar 1</td>
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<td>PHGY 704</td>
<td>Ph.D. Progress Seminar 2</td>
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<td>PHGY 720</td>
<td>Ph.D. Seminar Course 1</td>
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<tr>
<td>PHGY 721</td>
<td>Ph.D. Seminar Course 2</td>
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<td>Ph.D. Seminar Course 3</td>
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<td>PHGY 723</td>
<td>Ph.D. Seminar Course 4</td>
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<td>PHGY 724</td>
<td>Ph.D. Seminar Course 5</td>
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<tr>
<td>PHGY 725</td>
<td>Ph.D. Seminar Course 6</td>
</tr>
</tbody>
</table>

* Students must present the Ph.D. Proposal Seminar three months after starting the program.

Comprehensive

PHGY 701 (0) Ph.D. Comprehensive Examination

Students must complete the Comprehensive Examination within 6-12 months of admission to the program.

Elective Courses (9 credits)

In addition to the above, students are required to take an additional 9 credits of Physiology or Science at the 500 level or above, in consultation with the GSAAC and the candidate's supervisor.

Ph.D. in Physiology – Bioinformatics Option/Concentration

Required Courses (16 credits)

<table>
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<td>PHGY 704</td>
<td>Ph.D. Progress Seminar 2</td>
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<td>PHGY 720</td>
<td>Ph.D. Seminar Course 1</td>
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<tr>
<td>PHGY 721</td>
<td>Ph.D. Seminar Course 2</td>
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<td>PHGY 722</td>
<td>Ph.D. Seminar Course 3</td>
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<td>PHGY 723</td>
<td>Ph.D. Seminar Course 4</td>
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</table>

* Students must present the Ph.D. Proposal Seminar three months after starting the program.

Comprehensive

PHGY 701 (0) Ph.D. Comprehensive Examination

Students must complete the Comprehensive Examination within 6-12 months of admission to the program.

Elective Courses (9 credits)

In addition to the above, students are required to take an additional 9 credits of Physiology or Science at the 500 level or above, in consultation with the GSAAC and the candidate's supervisor.
66.6 Courses

Students preparing to register should consult Class Schedule on the web at www.mcgill.ca/student-records/register/ class-schedule for the most up-to-date list of courses available; courses may have been added, rescheduled or cancelled after this Calendar was published. Class Schedule lists courses by term and includes days, times, locations, and names of instructors.

Term(s) offered (Fall, Winter, Summer) may appear after the credit weight to indicate when a course would normally be taught. Please check Class Schedule to confirm this information.

Note: All undergraduate courses administered by the Faculty of Science (courses at the 100 to 500 level) have limited enrolment.

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

PHGY 502 EXERCISE PHYSIOLOGY. (3) (Winter) (Prerequisites: PHGY 311, PHGY 312, and PHGY 313) Behaviour of physiological processes in response to physical effort, in areas such as structural basis of muscle contraction, thermoregulation during exercise, mechanics and energetics of muscle contraction, fuel utilisation, fatigue, physiological adjustments during exercise and influence of training.

PHGY 508 ADVANCED RENAL PHYSIOLOGY. (3) (Fall) (Prerequisite (Undergraduate): PHGY 312 or the equivalent) (Restriction: Open to advanced undergraduate and graduate students) Offered in conjunction with the Department of Medicine. Lectures and seminars will cover advanced concepts in selected areas of kidney physiology (glomerular and tubular function) as well as membrane and epithelial transport. Students will be expected to critically discuss selected experimental papers.

PHGY 513 CELLULAR IMMUNOLOGY. (3) (Winter) (3 hours lectures plus term paper) (Prerequisite: MIMM 314, or permission of the instructor) This course deals with cellular interactions, regulation and effector mechanisms of the normal immune response in relation to diseases and pathogenic processes. It is taught at an advanced level.

PHGY 515 PHYSIOLOGY OF BLOOD 1. (3) (Fall) (2 hours lecture plus 1 hour seminar weekly) (Prerequisite: PHGY 313 or PHGY 312 or permission of the instructor) Study of the cell and molecular physiology of hemostasis and its pathophysiology (bleeding and thrombosis). Emphases on molecular mechanisms regulating clot formation, fibrinolysis, and cell adhesion/aggregation. Experimental approaches and specific clinical disorders will be analyzed. Weekly discussions, and a major term paper.

PHGY 516 PHYSIOLOGY OF BLOOD 2. (3) (Winter) (2 hours lecture plus 1 hour seminar weekly) Bone marrow hematopoiesis, with emphasis on regulation of stem cell proliferation and differentiation along hematopoietic pathways. Formation and differentiation of red and white blood cells and some of the diseases associated with hematopoiesis will be covered. Emphasis will be given to the molecular mechanisms involved in the normal and pathological conditions.

PHGY 517 ARTIFICIAL INTERNAL ORGANS. (3) (Winter) (Prerequisite (Undergraduate): permission of instructors) Physiological, bioengineering, chemical and clinical aspects of artificial organs including basic principles and physiopathology of organ failure. Examples: oxygenator, cardiac support, vascular substitutes, cardiac pacemaker, biomaterials and tissue engineering, biocompatibility.

PHGY 518 ARTIFICIAL CELLS. (3) (Fall) (Prerequisite (Undergraduate): permission of instructors) Physiology, biotechnology, chemistry and biomedical application of artificial cells, blood substitutes, immobilized enzymes, microorganisms and cells, hemoperfusion, artificial kidneys, and drug delivery systems. PHGY 517 and PHGY 518 when taken together, will give a complete picture of this field. However, the student can select one of these.

PHGY 531 TOPICS IN APPLIED IMMUNOLOGY. (3) (Winter) (Restriction: Permission of the instructor) U3 InterDept. Honours Immunology students and graduate students with strong immunology background (e.g. PHGY 513 and BIOC 503) Seminar format course in which experts in immunologic mechanisms of resistance against a variety of infectious diseases, including AIDS, malaria, and tuberculosis oversee student moderators in their presentation of recent scientific literature in the field.

PHGY 550 MOLECULAR PHYSIOLOGY OF BONE. (3) (Fall) (1 hour lecture, 2 hours seminar per week) (Prerequisites: PHGY 311, and BIOL 202 or equivalent) (Restriction: U3 Physiology students, and graduate students in biomedical departments; others by permission of the instructor) Students will develop a working knowledge of cartilage and bone. Discussion topics will include: molecular and cellular environment of bone; heritable and acquired skeletal defects; research models used to study metabolic bone disease.

PHGY 552 CELLULAR AND MOLECULAR PHYSIOLOGY. (3) (Winter) (1 hour lecture, 2 hours seminar weekly) (Prerequisite: PHGY 311) (Preference will be given to Physiology Honours and Graduate students) Discussions of recent significant advances in our understanding of the gene products involved in diverse cellular signaling pathways. Topics will include cell-surface hormone receptors, nuclear steroid hormone receptors, and ion channels and transporters. Students will present and critically evaluate experimental approaches, results and interpretations of selected research publications.

PHGY 556 TOPICS IN SYSTEMS NEUROSCIENCE. (3) (Winter) (Restriction: Permission of the instructor required) (Restriction: Not open to students who have taken PHGY 456) Topics of current interest in systems neurophysiology and behavioural neuroscience including: the neural representation of sensory information and motor behaviours, models of sensory motor integration, and the computational analysis of problems in motor control and perception. Students will be expected to present and critically discuss journal articles in class.

PHGY 601 M.Sc. PROPOSAL SEMINAR. (1)

PHGY 602 LITERATURE SEARCH AND RESEARCH PROPOSAL. (3)

PHGY 603 SYSTEMS BIOLOGY AND BIOPHYSICS. (3) (Prerequisite: Knowledge of differential equations at the MATH 315 level or equivalent.) (Notes: Enrolment is limited to 20 students per semester. The course is 1.5 hours of lecture and 1.5 hours of seminar per week. Readings will focus on classic and current journal articles.) Introduction to classical and current topics in biophysics and systems biology in order to model the control of gene expression and intracellular signal transduction, as well as gene spread in populations.

This course is not scheduled for 2009-2010 academic year.

PHGY 607 LABORATORY RESEARCH 1. (3)

PHGY 608 LABORATORY RESEARCH 2. (3)

PHGY 610 BIOPHYSICS. (3) (Prerequisite: permission of the instructor) A series of seminars in selected topics in theoretical biology and biomathematics.

PHGY 620 PROGRESS IN RESEARCH. (3)

PHGY 621 THESIS 1. (12)

PHGY 622 THESIS 2. (15)

PHGY 623 M.Sc. SEMINAR. (3)

PHGY 701 Ph.D. COMPREHENSIVE EXAMINATION. (0)
COURSES OFFERED BY OTHER UNITS

PHGY 720 Ph.D. SEMINAR COURSE 1. (1) Required for Ph.D. students. Coordinated in conjunction with the weekly Departmental seminar series, students will meet for one hour before each seminar to critically discuss papers on the subject of the weekly seminar. Students will take turns introducing the papers and leading discussions on an overview of the research topic, some of the methodologies, results and conclusions.

PHGY 721 Ph.D. SEMINAR COURSE 2. (1) Required for Ph.D. students. Coordinated in conjunction with the weekly Departmental seminar series, students will meet for one hour before each seminar to critically discuss papers on the subject of the weekly seminar. Students will take turns introducing the papers and leading discussions on an overview of the research topic, some of the methodologies, results and conclusions.

PHGY 722 Ph.D. SEMINAR COURSE 3. (1) Required for Ph.D. students. Coordinated in conjunction with the weekly Departmental seminar series, students will meet for one hour before each seminar to critically discuss papers on the subject of the weekly seminar. Students will take turns introducing the papers and leading discussions on an overview of the research topic, some of the methodologies, results and conclusions.

PHGY 723 Ph.D. SEMINAR COURSE 4. (1) Required for Ph.D. students. Coordinated in conjunction with the weekly Departmental seminar series, students will meet for one hour before each seminar to critically discuss papers on the subject of the weekly seminar. Students will take turns introducing the papers and leading discussions on an overview of the research topic, some of the methodologies, results and conclusions.

PHGY 724 Ph.D. SEMINAR COURSE 5. (1) Required for Ph.D. students. Coordinated in conjunction with the weekly Departmental seminar series, students will meet for one hour before each seminar to critically discuss papers on the subject of the weekly seminar. Students will take turns introducing the papers and leading discussions on an overview of the research topic, some of the methodologies, results and conclusions.

PHGY 725 Ph.D. SEMINAR COURSE 6. (1) Required for Ph.D. students. Coordinated in conjunction with the weekly Departmental seminar series, students will meet for one hour before each seminar to critically discuss papers on the subject of the weekly seminar. Students will take turns introducing the papers and leading discussions on an overview of the research topic, some of the methodologies, results and conclusions.

PHGY 707 ADVANCED APPLIED RESPIRATORY PHYSIOLOGY. (3) (Winter) Offered in conjunction with the Department of Physiology. In depth coverage of respiratory biology including: functional anatomy of the respiratory system, pulmonary statics and dynamics, chest wall and respiratory muscles, ventilation and perfusion, control of breathing, and defense mechanisms. This course is aimed at providing a solid grounding in pulmonary biology and its research applications.

EXMD 508 ADVANCED TOPICS IN RESPIRATION. (3) (Winter) (Prerequisite: EXMD 507) Offered in conjunction with the Department of Physiology. In depth coverage of respiratory biology and pulmonary vascular physiology, biology of airway smooth muscle, respiratory epithelium and molecular biology of respiratory muscles. Dyspnea, mechanical ventilation and respiratory failure will also be covered. This course emphasizes application of respiratory biology to basic and applied research and touches on pulmonary pathophysiology.

EXMD 509 GASTROINTESTINAL PHYSIOLOGY AND PATHOLOGY. (3) (Fall and Winter) (Prerequisite: Graduate students, U3 undergraduates) Course deals with various aspects of gastrointestinal and hepatic function in health and altered physiological states. The principal focus is on the recent literature pertaining to cell and molecular mechanisms underlying the motility secretory process, absorption and secretion. The molecular biology of the hepatic viruses and various aspects of colonic neoplasia will also be considered.

EXMD 615 MEMBRANE CARBOHYDRATES. (3) (Winter) The structure, function and biosynthesis of glycoproteins, glycolipids and glycoaminoglycans, and the biological role of complex carbohydrates at the cell surface.

67 Plant Science

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Canada
Telephone: 514-398-7851
Fax: 514-398-7897
Email: plant.science@mcgill.ca
Website: www.mcgill.ca/plant

Chair — D.L. Smith
67.1 Staff

Emeritus Professors
W.F. Grant; B.A., M.A.(McM.), Ph.D.(Virg.), F.L.S.

Professors
P. Dutilleul; L.Sc., D.Sc.(Louvain)
D.L. Smith; B.Sc., M.Sc.(Acad.), Ph.D.(Guelph)
A.K. Watson; B.Sc.(Agr.), M.Sc.(Br. Col.), Ph.D.(Sask.)

Associate Professors
S. deBois; B.Sc.(Agr.), M.Sc., Ph.D.(Montr.)
D.J. Donnelly; B.Sc.(Agr.), M.Sc., Ph.D.(Br. Col.), Ph.D.(S. Fraser)
S. Jabaji; B.Sc.(Beirut), M.Sc.(Guelph), Ph.D.(Wat.)
A.C. Kushalappa; B.Sc., M.Sc., Ph.D.(Flor.)
P. Seguin; B.Sc.(Agr.), M.Sc.(McG.), Ph.D.(Minn.)
K.A. Stewart; B.Sc.(Agr.), M.Sc.(Br. Col.), Ph.D.(Rdg)
M. Waterway; B.A.(Grand Rapids), M.S.(Wisc.), Ph.D.(C’nell)

Assistant Professors
J. Bede; B.Sc.(Calg.), M.Sc., Ph.D.(Tor.)
J. Singh; B.Sc.(Agr.), M.Sc.(Punjab), Ph.D.(Syd.)
M. Stromvik; B.A., M.Sc.(Stockholm), Ph.D.(Ill.)

Faculty Lecturers
C. Begg; B.Sc.(Agr.), M.Sc.(Sask.), Ph.D.(McG.)
S. Lussier; B.Sc.(Agr.), M.Sc.(McG.)
K. McClintock; B.A., Ph.D.(Wellles.), B.Sc.(Agr.), M.Sc.(McG.)
D. Wees; B.Sc.(Agr.), M.Sc.(McG.)

Associate Member
G. Brown (Department of Biology)
T.A. Johns (Dietetics and Human Nutrition)

Adjunct Professors
T.L. Capson, S. Jenni, J.F. Laliberté

67.2 Programs Offered

The Department offers a M.Sc. and Ph.D. in Plant Science with options in Bioinformatics, Environment or Neotropical Environment and provides for study in all fields of the plant sciences. Research facilities – both field and laboratory – are available for investigations in plant breeding, crop physiology, crop management, plant ecology, the epidemiology and biology of plant diseases, the physiology of diseased plants, cytogenetics, biosystematics, recombinant DNA technology, mycology, weed biology, tissue culture, plant biochemistry and bioinformatics.

An advisory committee is named for each student, having the responsibility for developing the program of study appropriate to the student's background and area of specialization.

67.3 Admission Requirements

General
The minimum cumulative grade point average (CGPA) is 3.0/4.0 (second-class upper division) or a GPA of 3.2/4.0 during the last two years of full-time university study. High grades are expected in courses considered by the academic unit to be preparatory to graduate work. This implies that about one-third of all undergraduate courses should have been devoted to the subject itself and another third to cognate subjects.

Applicants must be graduates of a university of recognized reputation and hold a bachelor's degree equivalent to a McGill Honours degree in a subject closely related to the one selected for graduate work. This implies that about one-third of all undergraduate courses should have been devoted to the subject itself and another third to cognate subjects.

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

Competency in English – 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 appropriate exams, e.g., TOEFL (minimum score 550 on the paper-based test, 213 on the computer-based test, 86 on the internet-based test, with a minimum score of 20 on each), or IELTS (minimum overall band 6.5). The MCHE is not considered equivalent. Results must be submitted as part of the application. The University code is 0935 (McGill University, Montreal); please use Department code 31 (Graduate Schools), Biological Sciences - Agriculture, to ensure that your TOEFL reaches this office without delay.

Graduate Record Exam (GRE) – The GRE is not required, but it is highly recommended.

Application Fee (non-refundable) – A fee of $100 Canadian must accompany each application (including McGill students), otherwise it cannot be considered. This sum must be remitted using one of the following methods:

1. Credit card (by completing the appropriate section of the application form). N.B.: online applications must be paid for by credit card.
2. Certified cheque in CAD$ drawn on a Canadian bank.
4. Canadian money order in CAD$.
5. U.S. Money Order in USD$.
6. An international draft in Canadian funds drawn on a Canadian bank requested from the applicant's bank in his/her own country.

McGill University, Graduate and Postdoctoral Studies 2009-2010
Dates for Guaranteed Consideration
For dates for guaranteed consideration, please consult the follow-
ing website: www.mcgill.ca/gradapplicants/programs. Then select
the appropriate program. It may be necessary to delay review of
the applicant’s file until the following admittance period if applica-
tion materials including supporting documents are received after
the dates for guaranteed consideration. International applicants
are advised to apply well in advance of these dates because immi-
grantation procedures may be lengthy. Applicants are encouraged to
make use of the online application form available on the web at

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

Acceptance to all programs depends on a staff member agree-
ing to serve as the student’s supervisor and the student obtaining
financial support. Normally, a student will not be accepted unless
adequate financial support can be provided by the student and/or
the student’s supervisor. Academic units cannot guarantee financi-
support via teaching assistantships or other funds.
Qualifying Students – Some applicants whose academic
degrees and standing entitle them to serious consideration for
admission to graduate studies, but who are considered inade-
quately prepared in the subject selected may be admitted to a
Qualifying Program if they have met the Graduate and Postdoc-
toral Studies minimum CGPA of 3.0/4.0. The course(s) to be taken
in a Qualifying Program will be prescribed by the academic unit
concerned. Qualifying students are registered in graduate studies,
but not as candidates for a degree. Only one qualifying year is
permitted. Successful completion of a qualifying program
does not guarantee admission to a degree program.

67.5 Program Requirements

M.Sc. in Plant Science (Thesis) (45 credits)
Plant Science M.Sc. research programs normally require two
years for completion.

Candidates must complete a 45-credit course and research
program established by their advisory committee. They must also
attend all Thesis progress reports (PLNT 665, PLNT 666) and the
invitational seminar (PLNT 690).

Additional courses may be required at the discretion of the can-
didate’s supervisory committee.

Required Invitational Seminar (0 credit)
PLNT 690 (0) Research Horizons in Plant Science

Complementary Courses (6 credits)
6 credits, two graduate-level courses.

Thesis Component – Required (39 credits)
PLNT 664 (12) M.Sc. Thesis 1
PLNT 665 (12) M.Sc. Thesis 2
PLNT 666 (15) M.Sc. Thesis 3

M.Sc. in Plant Science (Thesis) – Bioinformatics
Option/Concentration (48 credits)
Plant Science M.Sc. research programs normally require two
years for completion.

Attendance at Thesis progress reports (PLNT 665, PLNT 666)
and the invitational seminar (PLNT 690) is required.

Additional courses may be required at the discretion of the can-
didate’s supervisory committee.

Required Courses (3 credits)
COMP 616 (3) Bioinformatics Seminar
PLNT 690 (0) Research Horizons in Plant Science
PLNT 691 (0) Research Horizons in Plant Science

Complementary Courses (6 credits)
6 credits to be chosen from the following courses:
BINF 621 (3) Bioinformatics: Molecular Biology
BMDE 652 (3) Bioinformatics: Proteomics
BTEC 555 (3) Structural Bioinformatics
COMP 618 (3) Bioinformatics: Functional Genomics
PHGY 603 (3) Systems Biology and Biophysics

Additional courses at the 500 or 600 level may be required at the
discretion of the candidate’s advisory committee.

Thesis Component - Required (39 credits)
PLNT 664 (12) M.Sc. Thesis 1
PLNT 665 (12) M.Sc. Thesis 2
PLNT 666 (15) M.Sc. Thesis 3

M.Sc. in Plant Science (Thesis) – Environment
Option/Concentration (48 credits)
Plant Science M.Sc. research programs normally require two
years for completion.

Attendance at Thesis progress reports (PLNT 665, PLNT 666)
and the invitational seminar (PLNT 690) is required.

Additional courses may be required at the discretion of the can-
didate’s supervisory committee.

Required Courses (6 credits)
ENVR 610 (3) Foundations of Environmental Policy
ENVR 650 (1) Environmental Seminar 1
ENVR 651 (1) Environmental Seminar 2
ENVR 652 (1) Environmental Seminar 3
PLNT 690 (0) Research Horizons in Plant Science

Complementary Courses (3 credits)
3 credits, one of the following courses:
ENVR 519 (3) Global Environmental Politics
ENVR 544 (3) Environmental Measurement and Modelling
ENVR 580 (3) Topics in Environment 3
ENVR 611 (3) The Economy of Nature
ENVR 620 (3) Environment and Health of Species
ENVR 622 (3) Sustainable Landscapes
ENVR 630 (3) Civilization and Environment 1
ENVR 680 (3) Topics in Environment 4

or other graduate course recommended by the advisory
committee and approved by the Environment Option Committee

Thesis Component – Required (39 credits)
PLNT 664 (12) M.Sc. Thesis 1
PLNT 665 (12) M.Sc. Thesis 2
PLNT 666 (15) M.Sc. Thesis 3

M.Sc. in Plant Science (Thesis) – Neotropical Environment
Option/Concentration (48 credits)
Plant Science M.Sc. research programs normally require two
years for completion.

Candidates must complete a 48-credit course and research
program established by their advisory committee. Additional
courses may be required at the discretion of the candidate's
supervisory committee.

When in residence in Montreal attendance at all Thesis
progress reports (PLNT 665, PLNT 666) and the invitational sem-
inar (PLNT 690) is required.

Candidates must also participate in the STRI seminar series
when in residence in Panama, and in the MSE-Panama Sympo-
sium Presentation in Montreal.

Required Courses (6 credits)
BIOL 640 (3) Tropical Biology and Conservation
ENVR 610 (3) Foundations of Environmental Policy
PLNT 690 (0) Research Horizons in Plant Science

Complementary Courses (3 credits)
3 credits, one of the following courses:
AGRI 550 (3) Sustained Tropical Agriculture
BIOL 553 (3) Neotropical Environments
BIOL 641 (3) Issues in Tropical Biology
ENVR 611 (3) The Economy of Nature
ENVR 612 (3) Tropical Environmental Issues
**PLANT SCIENCE**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>ENVR 680</td>
<td>Topics in Environment 4</td>
<td>(3)</td>
</tr>
<tr>
<td>POLI 644</td>
<td>Tropical Environmental Politics</td>
<td>(3)</td>
</tr>
<tr>
<td>SOCI 565</td>
<td>Social Change in Panama</td>
<td>(3)</td>
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</tbody>
</table>

**Thesis Component – Required** (39 credits)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>PLNT 664</td>
<td>M.Sc. Thesis 1</td>
<td>(12)</td>
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<tr>
<td>PLNT 665</td>
<td>M.Sc. Thesis 2</td>
<td>(12)</td>
</tr>
<tr>
<td>PLNT 666</td>
<td>M.Sc. Thesis 3</td>
<td>(15)</td>
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</tbody>
</table>

**M.Sc.A. in Plant Science (Non-Thesis)** (45 credits)

N.B. this program is under revision. Please contact Ms. Carolyn Bowes for information.

**Ph.D. in Plant Science**

Students who have taken their M.Sc. degree at McGill University will be required to spend one term in study at another research institution.

Candidates must complete the program of study established by their advisory committee and attend the invitational seminar (PLNT 690).

**Required Courses** (0 credits)

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<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>PLNT 690</td>
<td>Research Horizons in Plant Science</td>
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**Complementary Courses**

Any courses at the 500 or 600 level deemed necessary for the chosen area of specialization.

**Comprehensive – Required**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>PLNT 701</td>
<td>Doctoral Comprehensive Exam</td>
<td>(0)</td>
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</tbody>
</table>

* Must be taken within one year of registering.

**Thesis** - Required

**Ph.D. in Plant Science – Bioinformatics Option/Concentration**

Students who have taken their M.Sc. degree at McGill University will be required to spend one term in study at another research institution.

Candidates must complete the program of study established by their advisory committee and attend the invitational seminar (PLNT 690).

**Required Courses** (3 credits)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
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<tbody>
<tr>
<td>COMP 616</td>
<td>Bioinformatics Seminar</td>
<td>(3)</td>
</tr>
<tr>
<td>PLNT 690</td>
<td>Research Horizons in Plant Science</td>
<td>(0)</td>
</tr>
</tbody>
</table>

**Complementary Courses** (6 credits)

Two courses to be chosen from the following:

- BINF 621: Bioinformatics: Molecular Biology (3 credits)
- BMDE 652: Bioinformatics: Proteomics (3 credits)
- BTEC 555: Structural Bioinformatics (3 credits)
- COMP 618: Bioinformatics: Functional Genomics (3 credits)
- PHGY 603: Systems Biology and Biophysics (3 credits)

Additional courses at the 500 or 600 level may be required at the discretion of the candidate’s advisory committee.

**Comprehensive – Required**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>PLNT 701</td>
<td>Doctoral Comprehensive Exam</td>
<td>(0)</td>
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* Must be taken within one year of registering.

**Ph.D. in Plant Science – Environment Option/Concentration**

**Required Courses** (6 credits)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>ENVR 610</td>
<td>Foundations of Environmental Policy</td>
<td>(3)</td>
</tr>
<tr>
<td>ENVR 650</td>
<td>Environmental Seminar 1</td>
<td>(1)</td>
</tr>
<tr>
<td>ENVR 651</td>
<td>Environmental Seminar 2</td>
<td>(1)</td>
</tr>
<tr>
<td>ENVR 652</td>
<td>Environmental Seminar 3</td>
<td>(1)</td>
</tr>
<tr>
<td>PLNT 690</td>
<td>Research Horizons in Plant Science</td>
<td>(0)</td>
</tr>
</tbody>
</table>

**Coursework**

Course requirements are specified by the staff in the discipline but are flexible and depend largely on the student’s background, immediate interests, and ultimate objectives.

**Complementary Courses**

One course chosen from:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENVR 519</td>
<td>Global Environmental Politics</td>
<td>(3)</td>
</tr>
<tr>
<td>ENVR 544</td>
<td>Environmental Measurement and Modelling</td>
<td>(3)</td>
</tr>
<tr>
<td>ENVR 580</td>
<td>Topics in Environment 3</td>
<td>(3)</td>
</tr>
<tr>
<td>ENVR 611</td>
<td>The Economy of Nature</td>
<td>(3)</td>
</tr>
<tr>
<td>ENVR 620</td>
<td>Environment and Health of Species</td>
<td>(3)</td>
</tr>
<tr>
<td>ENVR 622</td>
<td>Sustainable Landscapes</td>
<td>(3)</td>
</tr>
<tr>
<td>ENVR 630</td>
<td>Civilization and Environment 1</td>
<td>(3)</td>
</tr>
<tr>
<td>ENVR 680</td>
<td>Topics in Environment 4</td>
<td>(3)</td>
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</table>

or other graduate course recommended by the advisory committee and approved by the Environment Option Committee

**Ph.D. Comprehensive – Required**

<table>
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<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>PLNT 701</td>
<td>Doctoral Comprehensive Exam</td>
<td>(0)</td>
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</table>

* Must be taken within one year of registering.

**Thesis** - Required

**Ph.D. in Plant Science – Neotropical Environment Option/Concentration**

Students who have taken their M.Sc. degree at McGill University will be required to spend one term in study at another research institution.

Candidates must complete the program of study established by their advisory committee as outlined below. Additional courses may be required at the discretion of the candidate’s supervisory committee.

When in residence in Montreal attendance at the invitational seminar (PLNT 690) is required.

Candidates must also participate in the STRI seminar series when in residence in Panama, and in the MSE-Panama Symposium Presentation in Montreal.

**Required Courses** (6 credits)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 640</td>
<td>Tropical Biology and Conservation</td>
<td>(3)</td>
</tr>
<tr>
<td>ENVR 610</td>
<td>Foundations of Environmental Policy</td>
<td>(3)</td>
</tr>
<tr>
<td>PLNT 690</td>
<td>Research Horizons in Plant Science</td>
<td>(0)</td>
</tr>
</tbody>
</table>

**Complementary Courses** (3 credits)

3 credits, one of the following courses:

- AGRI 550: Sustained Tropical Agriculture
- BIOL 553: Neotropical Environments
- BIOL 641: Issues in Tropical Biology
- ENVR 611: The Economy of Nature
- ENVR 612: Tropical Environmental Issues
- ENVR 680: Topics in Environment 4
- POLI 644: Tropical Environmental Politics
- SOCI 565: Social Change in Panama

**Comprehensive – Required**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>PLNT 701</td>
<td>Doctoral Comprehensive Exam</td>
<td>(0)</td>
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</table>

* Must be taken within one year of registering.

**Thesis** – Required

67.6 Courses

Students preparing to register should consult Class Schedule on the web at www.mcgill.ca/student-records/register/class-schedule for the most up-to-date list of courses available; courses may have been added, rescheduled or cancelled after this Calendar was published. Class Schedule lists courses by term and includes days, times, locations, and names of instructors.

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

★ Denotes courses taught only in alternate years.
AEMA 610 STATISTICAL METHODS 2. (3) (3 lectures and one 2-hour lab) (Prerequisite: AEMA 310 or equivalent) Principles of linear models, multiple regression equations and classification models. Introduction to Analysis of Variance and common statistical designs used in agricultural and environmental sciences. Emphasis on balanced and unbalanced designs and data structures; their analysis and tests of statistical significance.

★ AEMA 611 EXPERIMENTAL DESIGNS 1. (3) (3 lectures and 1 conference) (Prerequisite: AEMA 310 or equivalent) General principles of experimental design, split-plot designs, spatial heterogeneity and experimental design, incomplete block designs and unbalanced designs, analysis of repeated measures, multivariate and modified univariate analyses of variance, central composite designs.

★ AEMA 614 TEMPORAL AND SPATIAL STATISTICS 1. (3) (3 hours lectures) (Prerequisite: AEMA 310 or equivalent) Temporal statistics: analysis in the time domain, Box-Jenkins forecasting methodology, analysis in the frequency domain, periodogram analysis. Spatial statistics: mapping, autocorrelogram analysis, geostatistics. Statistical inference with autocorrelated sample data.

★ AGRI 510 PROFESSIONAL PRACTICE. (3) (Restriction: Course restricted to senior undergraduate and graduate students.) The ethical issues that face a professional in the workplace; professional ethics and deontology, professional responsibilities as related to the laws of labour, health, safety and risks to the environment, risk management and communication.

BINF 511 BIOINFORMATICS FOR GENOMICS. (3) (Prerequisite: Understanding of cell and molecular biology (equivalent to a cell or molecular biology course) or permission from instructor.) Bioinformatics methods and reasoning in relation to genomics, proteomics and metabolomics strategies with an emphasis on functional genomics data. The course will cover introduction to UNIX, Perl programming, data processing and integration, file parsing, relational database design and implementation, angled towards solutions relevant for genomics.

BINF 621 BIOINFORMATICS: MOLECULAR BIOLOGY. (3) (Restriction: Enrolment by students in the Bioinformatics option or by permission from the course coordinators only. Limited to 30 students.) The main problems related to the analysis of biological sequences (sequence comparison, homology, gene annotation, phylogenetic inference, comparative genomics) and the computational approaches (dynamic programming algorithms, Blast heuristics, hidden Markov models, Bayesian statistics).

★ CELL 500 TECHNIQUES PLANT MOLECULAR GENETICS. (3) Plant biotechnology, recombinant DNA techniques, transgenic plant generation (genetically modified plants) as well as gene and gene product analysis.

★ CELL 501 PLANT MOLECULAR BIOLOGY AND GENETICS. (3) Photosynthesis, plant development, plant genome mutagenesis and analysis, and plant stress are discussed. Journal articles and reviews on all aspects of plant molecular biology and genetics.

PLNT 525 ADVANCED MICROPROPAGATION. (3) (One 3-hour lecture) A detailed study of the principles and techniques of plant micro propagation. Includes lectures, laboratories, discussion sessions and visits to local laboratories. Evaluation is based on contribution to discussions, laboratory reports and an individualized project.

PLNT 602 FORAGE CROP EXPERIMENTATION. (3)

PLNT 604 VEGETABLE CROPS. (3) Discussion and reading assignments on the application of plant physiology and other sciences to the production of vegetable crops.

PLNT 619 CROP PHYSIOLOGY. (3) (3 hours conference) Growth and development of crops, with emphasis on canopy structure and arrangement, light interception, temperature, water and salt stress.

PLNT 622 BIOLOGICAL CONTROL OF WEEDS. (3) Directed reading and discussion on the use of plant-feeding organisms and disease to reduce the density of undesirable vegetation in favour of more useful plant species.

PLNT 624 ADVANCED CELLULAR REGULATION. (3) (Restrictions: Not open to students who have taken PLNT 424.) An in depth overview of prokaryotic and eukaryotic cellular regulatory mechanisms, focusing on the regulation of gene expression, enzyme activity and signal transduction. Emphasis will be placed on concepts and problems in signal transduction and metabolic engineering.

PLNT 628 PLANT NITROGEN FIXATION AND MYCORRHIZAE. (3) A detailed examination of the chemistry, biochemistry, anatomy, physiology, ecology and agricultural application of biological nitrogen fixation and mycorrhizal associations in higher plants.


PLNT 650 ADVANCED SYSTEMATIC BOTANY. (3) This course deals with the literature and philosophy of plant classification, processes of speciation in higher plants, sources and interpretation of data, biosystematic methods and plant nomenclature.

PLNT 664 M.Sc. THESIS 1. (12) Written and oral presentation of thesis proposal to the research supervisory committee.

PLNT 665 M.Sc. THESIS 2. (12) Oral presentation of a proposal to the department and progress report on the thesis research project to the supervisory committee.


PLNT 670 SPECIAL TOPICS. (3) (2 hours seminar) This course is designed to develop seminar presentation skills in graduate students. The course consists of instruction on audio-visual preparation, speaking style, and organization of content, plus practice presentations by students.

PLNT 690 RESEARCH HORIZONS IN PLANT SCIENCE 1. (0) A series of seminars presented by invited speakers, staff and senior graduate students. The topics are selected to integrate the many fields of plant science.

PLNT 691 RESEARCH HORIZONS IN PLANT SCIENCE 2. (0) A series of seminars presented by invited speakers, staff and senior graduate students. The topics are selected to integrate the many fields of plant science.

PLNT 701 DOCTORAL COMPREHENSIVE EXAMINATION. (0)
68.2 Programs Offered

The Department offers programs leading to the M.A. (with or without thesis) and Ph.D. degrees. These programs combine depth of specialization in a particular field with breadth of knowledge in related fields. The staff offers courses and supervises research on most of the important areas of political science. Students may specialize in any of the following: Canadian Government and Politics; Comparative Politics, Political Theory and International Relations.

The Department awards a number of teaching assistantships each year and students who are admitted to the graduate program are automatically considered for such an award. The announcements listing the positions expected to be available will be posted by October 15 for Winter Term courses and March 15 for Fall and full year courses.

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

68.3 Admission Requirements

All applicants, including those who have done their undergraduate work at McGill, must submit at least two letters of reference. Transcripts from all universities attended must be sent to the Department.

Master’s

Students holding a B.A. degree may be eligible for admission to the M.A. program. Preparation equivalent to a McGill Honours Program in Political Science is desirable. Students who have inadequate preparation in Political Science but are otherwise judged to be qualified are admitted to a qualifying year, in which they undertake advanced undergraduate work.

Ph.D.

Students holding a master’s degree in Political Science may be eligible for admission to the Ph.D. program. In some instances, students may be admitted directly into the Ph.D. program without having completed an M.A. degree. They will be considered Ph.D. eligible for admission to the Ph.D. program. In some instances, some previous political science course work could be applied to the requirements of the program, provided that it did not count towards any other degree.

GRE and TOEFL Exams

GRE results are required for applications to the doctoral program; this excludes currently registered McGill master’s students applying to the doctoral program. GRE results are not required for students applying to the master’s program or qualifying term or year.

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 TOEFL scores. A minimum score of 600 on the paper-based test (250 on the computer-based test, or 100 on the internet-based test, with each component score not less than 20) is required for admission. Files will not be considered unless TOEFL scores are received before the dates for guaranteed consideration.

For more information, consult the following websites:

68.4 Application Procedures

Applications will be considered upon receipt of:
1. application form;
2. original transcripts;
3. two letters of reference;
4. $100 application fee;
5. test results: TOEFL (if applicable) and GRE (for Ph.D. applicants);
6. personal statement (one page);
7. sample of writing (Ph.D. only).

All applications should be submitted to the Graduate Coordinator in the Department of Political Science.

Dates for Guaranteed Consideration

For dates for guaranteed consideration, please consult the following website: www.mcgill.ca/gradapplicants/programs. Then select the appropriate program.

McGill’s online application form for graduate program candidates is available at www.mcgill.ca/gradapplicants/apply.

68.5 Program Requirements

MASTER’S PROGRAMS

Students may select a program with the Thesis or the Non-Thesis (Research Project) in completing M.A. degree requirements. They may switch from one option to the other while completing their coursework.
**Required Course** (6 credits)

POLI 691 (6) Bibliographic Methods 1

**Complementary Courses** (15 credits)

3 - 6 credits, either of the following 3-credit options, or preferably, both:

POLI 612 (3) Empirical Methods
or a suitable more advanced course

or, one of the following courses:

POLI 561 (3) Seminar: Political Theory
POLI 613 (3) Selected Themes: Political Theory
POLI 614 (3) Classical Political Thought
POLI 616 (3) Modern Political Analysis
POLI 617 (3) Problems in Political Theory

9 - 12 credits of 500/600-level courses as determined by the student's area of study;

Of the 15 credits of complementary courses, up to 3 credits may be outside the department. Candidates for the M.A. degree follow an individual program approved by the Department.

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

POLI 697 (12) M.A. Thesis Proposal
POLI 698 (12) Master's Thesis Submission

**M.A. in Political Science (Thesis) – Development Studies Option/Concentration (45 credits)**

The Development Studies Option (DSO) is a cross-disciplinary M.A. program offered as an option within existing M.A. programs in the departments of Geography, History, Political Science, Anthropology, Economics, and Sociology. This thesis option is open to master's students specializing in development studies. Students enter through one of the participating departments and must meet the M.A. requirements of that unit. Students will take an interdisciplinary seminar and two other courses on development issues. The M.A. thesis must be on a topic relating to development studies, approved by the DSO coordinating committee.

**Required Courses** (9 credits)

- POLI 691 (3) Bibliographic Methods 1

**Complementary Courses** (12 credits)

3 - 6 credits, either of the following 3-credit options, or preferably, both:

- POLI 612 (3) Empirical Methods
  or a suitable more advanced course

or, one of the following courses:

- POLI 561 (3) Seminar: Political Theory
- POLI 613 (3) Selected Themes: Political Theory
- POLI 614 (3) Classical Political Thought
- POLI 616 (3) Modern Political Analysis
- POLI 617 (3) Problems in Political Theory

9 - 12 credits of 500/600-level courses as determined by the student's area of study;

Of the 15 credits of complementary courses, up to 3 credits may be outside the department. Candidates for the M.A. degree follow an individual program approved by the Department.

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

POLI 697 (12) M.A. Thesis Proposal
POLI 698 (12) Master's Thesis Submission

**M.A. in Political Science (Thesis) – European Studies Option/Concentration (45 credits)**

The European Studies Option is a cross-disciplinary M.A. program offered as an option within existing M.A. programs in the Departments of History, Political Science, and Sociology as well as the Faculty of Law. This option is open to students whose work is focused on Europe, in particular on issues relating to European integration, broadly understood. Students will take an interdisciplinary capstone seminar and two other courses on European themes and issues as part of their M.A. program. The M.A. thesis must be on a topic relating to European Studies, approved by the European Studies Option (ESO) coordinating committee. Knowledge of French, while not a prerequisite, is an important asset for admission and will be encouraged as part of the program, as well as knowledge of a third European language.

**Required Courses** (9 credits)

- POLI 691 (3) Bibliographic Methods 1

**Complementary Courses** (12 credits)

3 - 6 credits, either of the following 3-credit options, or preferably, both:

- POLI 612 (3) Empirical Methods
  or a suitable more advanced course

or, one of the following courses:

- POLI 561 (3) Seminar: Political Theory
- POLI 613 (3) Selected Themes: Political Theory
- POLI 614 (3) Classical Political Thought
- POLI 616 (3) Modern Political Analysis
- POLI 617 (3) Problems in Political Theory

3 - 6 credits from the following group of courses on European Politics:

- POLI 619 (3) Immigrants / Refugees / Minorities
- POLI 625 (3) Comparative Policy Analysis
- POLI 628 (3) Comparative Politics
- POLI 629 (3) Post-Communist Transformations
- POLI 630 (3) Topics in European Politics
- POLI 639 (3) Politics of Developed Areas
- POLI 651 (3) The EU and Political Integration
- POLI 680 (3) Social Change/Advanced Industrialized Democracies

3 - 6 credits at the 500 level or higher in courses in political science. Course list available from Department.

Of the 12 credits of complementary courses, up to 3 credits may be taken outside the department. Candidates for the M.A. degree follow an individual program approved by the Department.

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

POLI 697 (12) M.A. Thesis Proposal
POLI 698 (12) Master's Thesis Submission

The M.A. thesis must be on a topic relating to development studies, approved by the Development Studies Option (DSO) coordinating committee.

**M.A. in Political Science (Thesis) – Neotropical Environment Option/Concentration (45 credits)**

A thesis is required to demonstrate proficiency in research. It is normally about 100 pages long and is subject to evaluation by one examiner internal to the Department and one examiner external to the Department.
Required Courses (12 credits)
BIOL 640 (3) Tropical Biology and Conservation
ENVR 610 (3) Foundations of Environmental Policy
POLI 691 (6) Bibliographic Methods 1

Complementary Courses (9 credits)
3 - 6 credits, either of the following 3-credit options, or preferably, both:
POLI 612 (3) Empirical Methods
or a suitable more advanced course
one of the following courses:
POLI 561 (3) Seminar: Political Theory
POLI 616 (3) Modern Political Analysis
POLI 617 (3) Problems in Political Theory
3 - 6 additional credits of graduate-level (500/600) courses; which may include:
POLI 644 (3) Tropical Environmental Politics

Note: Up to two 500/600-level complementary courses outside the department in related disciplines may be allowed if appropriate for the student’s program.

Thesis Component – Required (24 credits)
POLI 697 (12) M.A. Thesis Proposal
POLI 698 (12) Master's Thesis Submission

M.A. in Political Science (Non-Thesis) (45 credits)
A research paper is required to demonstrate proficiency in research. It is normally about 50 pages in length and involves revision of a paper written for one of the graduate courses completed in the program. The research paper is evaluated by two faculty members in the Department.

Required Course (6 credits)
POLI 691 (6) Bibliographic Methods 1

Complementary Courses (21 credits)
3 - 6 credits, either of the following 3-credit options, or preferably, both:
POLI 612 (3) Empirical Methods
or a suitable more advanced course
one of the following courses:
POLI 561 (3) Seminar: Political Theory
POLI 613 (3) Selected Themes: Political Theory
POLI 614 (3) Classical Political Thought
POLI 616 (3) Modern Political Analysis
POLI 617 (3) Problems in Political Theory
15 - 18 credits of 500/600-level courses; up to 6 credits may be outside the department.

Research Paper Component – Required (18 credits)
POLI 693 (3) M.A. Research Proposal
POLI 694 (3) Research Preparation 1
POLI 695 (3) Research Preparation 2
POLI 696 (3) Research Preparation 3
POLI 699 (6) Master's Research Essay

M.A. in Political Science (Non-Thesis) – Development Studies Option/Concentration (45 credits)
The Development Studies Option (DSO) is a cross-disciplinary M.A. program offered as an option within existing M.A. programs in the departments of Geography, History, Political Science, Anthropology, Economics, and Sociology. This non-thesis option is open to master's students specializing in development studies. Students enter through one of the participating departments and must meet the M.A. requirements of that unit. Students will take an interdisciplinary seminar and a variety of graduate-level courses on international development issues. The M.A. essay must be on a topic relating to development studies, approved by the DSO coordinating committee.

Required Courses (9 credits)
INTD 657 (3) Development Studies Seminar
POLI 691 (6) Bibliographic Methods 1

Complementary Courses (18 credits)
3 - 6 credits, either of the following 3-credit options, or preferably, both:
POLI 612 (3) Empirical Methods
or a suitable more advanced 500- or 600-level course
one of the following courses:
POLI 561 (3) Seminar: Political Theory
POLI 613 (3) Selected Themes: Political Theory
POLI 614 (3) Classical Political Thought
POLI 616 (3) Modern Political Analysis
POLI 617 (3) Problems in Political Theory
12 - 15 credits additional 500/600-level courses related to international development studies. Course list available from Department.

Candidates for the M.A. degree follow an individual program in international development studies approved by the Department.

Research Paper Component – Required (18 credits)
POLI 693 (3) M.A. Research Proposal
POLI 694 (3) Research Preparation 1
POLI 695 (3) Research Preparation 2
POLI 696 (3) Research Preparation 3
POLI 699 (6) Master's Research Essay

M.A. in Political Science (Non-Thesis) – European Studies Option/Concentration (45 credits)
The European Studies Option is a cross-disciplinary M.A. program offered as an option within existing M.A. programs in the Departments of History, Political Science, and Sociology as well as the Faculty of Law. This option is open to students whose work is focused on Europe, in particular on issues relating to European integration, broadly understood. Students will take an interdisciplinary capstone seminar and two other courses on European themes and issues as part of their M.A. program. Knowledge of French, while not a prerequisite, is an important asset for admission and will be encouraged as part of the program, as well as knowledge of a third European language.

Required Courses (9 credits)
POLI 659 (3) Interdisciplinary Seminar in European Studies
POLI 691 (6) Bibliographic Methods 1

Complementary Courses (18 credits)
3 - 6 credits, either of the following 3-credit options, or preferably, both:
POLI 612 (3) Empirical Methods
or a suitable more advanced 500- or 600-level course
or, one of the following courses:
POLI 561 (3) Seminar: Political Theory
POLI 613 (3) Selected Themes: Political Theory
POLI 614 (3) Classical Political Thought
POLI 616 (3) Modern Political Analysis
POLI 617 (3) Problems in Political Theory
6 - 9 credits from the following group of courses on European Politics:
POLI 619 (3) Immigrants / Refugees / Minorities
POLI 625 (3) Comparative Policy Analysis
POLI 628 (3) Comparative Politics
POLI 629 (3) Post-Communist Transformations
POLI 630 (3) Topics in European Politics
POLI 639 (3) Politics of Developed Areas
POLI 651 (3) The EU and Political Integration
POLI 680 (3) Social Change/Advanced Industrialized Democracies
3 - 6 credits at the 500 level or higher in courses in political science. Course list available from Department.

Of the 18 credits of complementary courses, up to 6 credits may be taken outside the department.

Candidates for the M.A. degree follow an individual program approved by the Department.

Research Paper Component – Required (18 credits)
POLI 693 (3) M.A. Research Proposal
POLI 694 (3) Research Preparation 1
POLI 695 (3) Research Preparation 2
POLI 696 (3) Research Preparation 3
POLI 699 (6) Master's Research Essay

M.A. in Political Science (Non-Thesis) – Gender and Women’s Studies Option/Concentration (45 credits)
The Graduate Option in Gender and Women’s Studies is an interdisciplinary program for students who meet the degree requirements in Political Science who wish to earn 6 credits of approved coursework focusing on gender and women’s studies, and issues in feminist research and methods. The student’s research paper must be on a topic centrally focused on gender and/or women’s studies.

Required Course (9 credits)
POLI 691 (6) Bibliographic Methods 1
WMST 601 (3) Feminist Theories and Methods

Complementary Courses (18 credits)
3 - 6 credits, either of the following 3-credit options, or preferably, both:
POLI 612 (3) Empirical Methods
or a suitable more advanced course at the graduate level
or, one of the following courses:
POLI 561 (3) Seminar: Political Theory
POLI 613 (3) Selected Themes: Political Theory
POLI 614 (3) Classical Political Thought
POLI 616 (3) Modern Political Analysis
POLI 617 (3) Problems in Political Theory
9 - 12 credits at the 500/600 level as determined by the student’s area of study.
3 additional credits in gender/women’s studies, either:
WMST 602 (3) Feminist Research Symposium
or other approved course on gender/women’s studies

Note: Should the “other” approved gender/women’s studies course be taken in the Department of Political Science, the student is eligible to take a 500/600-level course as determined by the student’s area of study outside the department.

Candidates for the M.A. degree follow an individual program approved by the Department.

Research Paper Component – Required (18 credits)
POLI 693 (3) M.A. Research Proposal
POLI 694 (3) Research Preparation 1
POLI 695 (3) Research Preparation 2
POLI 696 (3) Research Preparation 3
POLI 699 (6) Master's Research Essay

M.A. in Political Science (Non-Thesis) – Neotropical Environment Option/Concentration (45 credits)
A research paper is required to demonstrate proficiency in research. It is normally about 50 pages in length and involves revision of a paper written for one of the graduate courses completed in the program. The research paper is evaluated by two faculty members in the Department.

Required Courses (12 credits)
POLI 691 (6) Bibliographic Methods 1
BIOL 640 (3) Tropical Biology and Conservation
ENVR 610 (3) Foundations of Environmental Policy

Complementary Courses (15 credits)
3 - 6 credits, either of the following 3-credit options, or preferably, both:
POLI 612 (3) Empirical Methods
or a suitable more advanced course
one of the following courses:
POLI 561 (3) Seminar: Political Theory
POLI 616 (3) Modern Political Analysis
POLI 617 (3) Problems in Political Theory
9 - 12 credits of graduate-level (500/600) POLI courses; which may include:
POLI 644 (3) Tropical Environmental Politics

Note: Up to two 500/600-level complementary courses outside the department in related disciplines may be allowed if appropriate for the student’s program

Research Paper Component – Required (18 credits)
POLI 693 (3) M.A. Research Proposal
POLI 694 (3) Research Preparation 1
POLI 695 (3) Research Preparation 2
POLI 696 (3) Research Preparation 3
POLI 699 (6) Master's Research Essay

M.A. in Political Science (Non-Thesis) – Social Statistics Option/Concentration (45 credits)
This program complements disciplinary training with statistical research. Students will normally complete program course requirements, supplemented by further statistical courses, as advised by the Option advisor, and subject to approval by the Department.

A research paper is required to demonstrate proficiency in research. It is normally about 50 pages in length and involves revision of a paper written for one of the graduate courses completed in the program. The research paper is evaluated by two faculty members in the Department.

Entrance to this option is by application to the Social Statistics Option Committee subsequent to acceptance into the Department program.

Required Course (6 credits)
POLI 691 (6) Bibliographic Methods 1

Complementary Courses (21 credits)
3 credits:
POLI 688 (3) Seminar on Social Statistics
or ECON 688
or GEOG 688
or SOCI 688 (3) Social Statistics 1
3 - 6 credits, either of the following 3-credit options, or preferably, both:
POLI 612 (3) Empirical Methods
or a suitable more advanced course
one of the following courses:
POLI 561 (3) Seminar: Political Theory
POLI 613 (3) Selected Themes: Political Theory
POLI 614 (3) Classical Political Thought
POLI 616 (3) Modern Political Analysis
POLI 617 (3) Problems in Political Theory

12 - 15 credits of graduate-level (500/600) POLI courses; up to 6 credits in related disciplines may be allowed if it is appropriate to the program.

Research Paper Component – Required (18 credits)
POLI 693 (3) M.A. Research Proposal
POLI 694 (3) Research Preparation 1
POLI 695 (3) Research Preparation 2
POLI 696 (3) Research Preparation 3
POLI 699 (6) Master's Research Essay
Candidates for the M.A. degree follow a program approved on an individual basis by the Department. All students who wish to be considered for the Ph.D. program are evaluated on the basis of their M.A. program. Only a small number of students are permitted to go on for their doctorate and students currently enrolled in the M.A. program must formally apply for admission into the Ph.D. program. A pass for the M.A. degree does not necessarily imply permission to proceed to the doctorate.

**Ph.D. in Political Science**

Superior applicants, normally understood as students who are at least in the top 10 percent of their graduating class or who have a CGPA of at least 3.5 or its equivalent, will be eligible for admission into the Ph.D. track and receive a Ph.D. degree after successfully completing the requirements of the Ph.D. track.

**Required Courses** (0 credits)

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<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
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<tbody>
<tr>
<td>POLI 701</td>
<td>Ph.D. General Written Examination First Field</td>
</tr>
<tr>
<td>POLI 702</td>
<td>Ph.D. General Written Examination Second Field</td>
</tr>
<tr>
<td>POLI 799</td>
<td>Ph.D. Oral Comprehensive Examination</td>
</tr>
</tbody>
</table>

**Complementary Courses** (13 courses)

13 (3-credit) courses at the 500 level or higher chosen as follows:

**Major Fields:** (Eight courses)

- 4 courses in first major field
- 4 courses in second major field

**Note:** One course out of the eight must be a 700-level research seminar in one of the major fields.

**Political Theory:** (1 course)

One course in political theory at the 500, 600, or 700 level

**Methods:** (1 course)

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<td>Empirical Methods</td>
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**Additional Courses:** (3 courses)

Three additional courses of which at least one must be outside the student’s major fields.

**Advanced Research Tools**

Language Requirement: Students must pass an advanced-level translation test from a language other than English. If the student’s research will involve field work in a country where English is not widely spoken, the test will include an oral component. In selecting a language to fulfill this requirement, the student must demonstrate in writing how the chosen language is related to his or her research.

OR

Advanced Statistical Methods: To fulfill this requirement, students must complete a course (at the 500 level or higher) in advanced statistical methods.

- All students in the Ph.D. program are expected to take their written comprehensives and their oral comprehensive in the second term of their second year if admitted to the program at the Ph.D. 2 level or their third year if admitted at the Ph.D. 1 level to the program. Students are expected to have completed all of their required course work in their major and minor fields, as well as their methodology requirement (up to 39 credits - thirteen 3-credit courses), by no later than the end of the first term of their third year.
- Students are expected to submit dissertation proposals by the end of the second term of their third year.
- The student must write a doctoral dissertation which makes an original contribution to knowledge in the discipline.

**Ph.D. in Political Science – Neotropical Environment Option/Concentration**

**Required Courses** (9 credits)

<table>
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<tr>
<th>Course Code</th>
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<tr>
<td>BIOL 640</td>
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</tr>
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<td>Ph.D. Oral Comprehensive Examination</td>
</tr>
</tbody>
</table>

**Complementary Courses** (30 credits)

3 credits of graduate-level political theory
18 credits of departmental courses
6 credits of 700-level seminars in two fields AND

3 credits (one course) from the following courses:

- AGRI 550 (3) Sustained Tropical Agriculture
- BIOL 553 (3) Neotropical Environments
- BIOL 641 (3) Issues in Tropical Biology
- ENVR 611 (3) The Economy of Nature
- ENVR 612 (3) Tropical Environmental Issues
- ENVR 680 (3) Topics in Environment 4
- POLI 644 (3) Tropical Environmental Politics
- SOCI 565 (3) Social Change in Panama

**Advanced Research Tools**

Language requirement OR advanced statistical methods

**Ph.D. Thesis Proposal**

**Ph.D. Thesis**

Transfer students and students with master’s degrees from other universities: Transfer students will be treated as M.A. students who change tracks. Previous course work at the graduate level can be applied towards the requirements of the program, provided the Admission Committee is confident that the quality of such work is on par with McGill standards. Students transferring into the M.A.-Ph.D. track must fulfill a minimum residency requirement of two years, including a minimum of 6 courses and at least one 700-level Ph.D. research paper. All students will be required to pass the comprehensive written and oral exams.

### 68.6 Courses

Students preparing to register should consult Class Schedule on the web at [www.mcgill.ca/student-records/register/class-schedule](http://www.mcgill.ca/student-records/register/class-schedule) for the most up-to-date list of courses available; courses may have been added, rescheduled or cancelled after this Calendar was published. Class Schedule lists courses by term and includes days, times, locations, and names of instructors.

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

**POLI 521 SEMINAR: CANADIAN POLITICS AND GOVERNMENT.** (3) (Restriction: Open to graduate students, final year Honours students, and other advanced undergraduates with the permission of the instructor) (Prerequisite: At least one 300- or 400-level course in Canadian Politics) (Note: The field is Canadian Politics.) Selected problems of Canadian socio-economic and political structures; political culture; constitutional development, and governmental structure.

**POLI 522 SEMINAR: DEVELOPING AREAS.** (3) (Prerequisite: At least one upper-level course in the politics of developing areas) (Restriction: Open to graduate students, final year Honours students, and other advanced undergraduates with permission of instructor) (Note: The area in the field of Comparative Politics is Developing Areas.) State-society relations in the developing world through historical, comparative, and analytical perspectives, focusing on: (1) theories and concepts of the state; (2) state capacity and incapacity; (3) state formation.

**POLI 524 SEMINAR: DEVELOPED AREAS.** (3) (Prerequisite: At least one upper-level course in the politics of developed areas) (Restriction: Open to graduate students, final year Honours students, and other advanced undergraduates with the permission of the instructor) (Note: The area in the field of Comparative Politics is Developed Areas.)
POLI 561 SEMINAR: POLITICAL THEORY. (3) (Prerequisite: At least one upper-level course in political philosophy) (Restriction: Open to graduate students, final year Honours students, and other advanced undergraduates with the permission of the instructor) (Note: The field is Political Theory.) A topic in political philosophy such as democracy, liberty, property or nationalism, or a political philosopher, is studied to enable students to research a topic in depth, to present their papers to the seminar, and to engage in and profit from discussion and debate.

POLI 575 SEMINAR: INTERNATIONAL POLITICS. (3) (Fall and Winter) (Restriction: Open to graduate students and final year Honours students only) (Note: The field is International Politics.) A research seminar dealing with topics in the field of international politics.

POLI 599 INTERNSHIP: POLITICAL SCIENCE. (3) (Summer) (Restriction: Open, with permission, to final year Honours and Joint Honours students, and graduate students. This course does not count as a 500-level seminar under the Honours requirements) The internship shall consist of a minimum of 150 hours of work over a period of 12 weeks, plus a major research project based on the internship. The major project will ordinarily consist of a major research paper, plus a substantial written record of the work conducted during the internship.

POLI 603 HISTORY OF POLITICAL THOUGHT 1. (3) (There will be 2 lectures per week (taken with undergraduates enrolled in POLI 433 and one graduate-student-only tutorial per week.) (Note: The field is Political Theory.) A graduate level introduction to key early-modern and modern political theories.

POLI 604 HISTORY OF POLITICAL THOUGHT 2. (3) (Note: The field is Political Theory.) A graduate level introduction to key modern political theories. Among the theorists to be covered are: Hegel, Marx, Nietzsche, Mill, Toqueville.

POLI 612 EMPirical METHODS. (3) Fundamental principles of empirical research, in which the emphasis will be placed on acquainting the student with the techniques most commonly used by political scientists. The topics include the design of research projects, procedure in carrying out research, problems of measurement, survey research, scaling, data processing, and data analysis.

POLI 613 SELECTED THEMES: POLITICAL THEORY. (3) (Note: The field is Political Theory.) A seminar on a theme in contemporary political theory or in the history of political theory.

POLI 616 MODERN POLITICAL ANALYSIS. (3) (Note: The field is Political Theory.) An introduction to the concepts underlying modern approaches to the study of politics. The scope of the discipline will be delineated and the foundations of empirical research, including the philosophy and methodology of science especially as these apply to social science, will be considered. Various alternatives and critiques will be presented and evaluated.

POLI 617 PROBLEMS IN POLITICAL THEORY. (3) (Note: The field is Political Theory.) An introduction to central normative issues in the study of politics. The seminar consists of lectures, oral presentations, discussion and research papers.

POLI 618 ADVANCED EMPIRICAL METHODS. (3) (Prerequisite: POLI 612 or equivalent.) An introduction to regression techniques common in political science, including applied multiple regression techniques, beginning with basic linear models and ending with models for binary or ordinal dependent variables. Methodological issues are taught using substantive issues and debates in the discipline.

POLI 619 IMMIGRANTS / REFUGEES / MINORITIES. (3) (Note: The field is Comparative Politics in Developed Areas and Canadian Politics.) A consideration of the different dimensions of politics associated with immigration and ethnoracial diversity. The course will emphasize the Canadian case in comparative perspective.

POLI 621 INTERPRETING CANADIAN POLITICAL PROCESS. (3) (Note: The field is Canadian Politics.) Strategies for studying the Canadian political process. Pluralist, Marxist, and state autonomist approaches for analysing the relative significance and inter-relationships of basic components of the Canadian political system. Although one purpose of the course is to survey the literature on individual topics, a broader purpose is to employ individual research strategies to develop conclusions about the nature, distribution, and exercise of power in Canada.

POLI 622 ADVANCED TOPICS CANADIAN POLITICS. (3) (Note: The field is Canadian Politics.) A specific problem area in Canadian Politics.

POLI 628 COMPARATIVE POLITICS. (3) (Note: The field is Comparative Politics in Developed Areas.) An introduction for graduate students to the sub-discipline of comparative politics. The logic of comparative analysis as well as a number of alternative paradigms for analyzing and comparing political systems and processes.

POLI 629 POST-COMMUNIST TRANSFORMATIONS. (3) (Note: The field is Comparative Politics in Developed Areas.) This course will incorporate discussions of concrete political processes and events, but will focus primarily on theories in comparative politics that might help us understand changes currently underway in the former Soviet Union. Students will continuously assess the value of these theories as methods of understanding change in the former Soviet Union.

POLI 630 TOPICS IN EUROPEAN POLITICS. (3) (Note: The field is Comparative Politics in Developed Areas.) Examination of recent trends and current debates in the electoral politics, political economy and polity of Europe. The course will focus on developments at two levels: that of national political systems and that of the region as a whole, particularly as embodied in the European Union.

POLI 631 COMPARATIVE FEDERALISM. (3) Theoretical underpinnings and empirical challenges of federal states from a comparative perspective on industrializing countries, with Canadian federalism providing an important example. Issues include federalism and ethnic conflict, fiscal federalism, and federalism and markets.

POLI 632 VOTING BEHAVIOUR/PUBLIC OPINION. (3) (Note: The field is Comparative Politics in Developed Areas and Canadian Politics.) A critical examination of major debates within the comparative literature on voting behaviour and public opinion. The work discussed will draw primarily on research conducted in the United States, Canada and Western Europe.

POLI 633 SOUTHEAST ASIAN POLITICS. (3) (Note: The field is Comparative Politics in Developed Areas.) An examination of the literature on Southeast Asian politics. Topics include: state structures, political regimes, political parties, political economy, nationalism, ethnicity, and religion. Emphasis on comparative analysis within the region and on the different analytical perspectives employed to study Southeast Asia.

POLI 635 THEORIES OF U.S. POLITICS. (3) (Note: The field is Comparative Politics in Developed Areas.) A critical examination of some of the major theoretical analyses of U.S. politics. The course will focus on several key issues in the study of American political life, including distribution of power, the policy process, state and society, and bargaining and coalition building.

POLI 636 APPROACHES THEOR/POPULIST QUE. (3) (This course will be conducted both in English and French; a reading knowledge and an ability to understand the two languages is recommended) (Note: The field is Canadian Politics.) Critical examination of some major approaches to the study of Quebec politics and society, with particular emphasis on issues of nationalism, social and political movements, ethnicity, language and class conflicts, federal-provincial relations, as well as an analysis of the role of intellectuals and party politics in the deliberation process.

POLI 638 GLOBAL HEALTH & SOCIAL POLICY. (3) (Restriction: Enrolment limit 25; not open to students who are taking or have taken EPUB 638.) Formal methods used in policy analysis, role of politics and conditions under which research on global health and social policy is used by decision makers.

POLI 639 POLITICS OF DEVELOPED AREAS. (3) (Note: The field is Comparative Politics in Developed Areas.) A specific problem area in the Comparative Politics of Developed Areas.

POLI 640 MIDDLE EAST POLITICS. (3) (Note: The field is Comparative Politics in Developing Areas.) Examination of political and
POLI 641 SEMINAR: POLITICAL CHANGE IN SOUTH ASIA. (3) (Note: The field is Comparative Politics in Developing Areas.) This course examines major political and social changes in South Asia. Explores such topics as colonialism and nationalism; trends in mass mobilization and electoral politics; regime changes; economic policies and their impact; and conflicts over authority patterns, policy agendas, and national boundaries.

POLI 643 POLITICS OF IDENTITY. (3) (Note: The field is Comparative Politics in Developing Areas.) Theoretical approaches to the politics of identity with reference to experiences in different world regions. The politics of nationalism, ethnicity, religion, race and gender, and the relationship of such forms of identity politics to democracy, tolerance, pluralism, violence, socio-economic change and equality.

POLI 646 POLITICS OF DEVELOPING AREAS 1. (3) (Note: The field is Comparative Politics in Developing Areas.) A specific problem area in the Comparative Politics of Developing Areas.

POLI 647 DEVELOPMENT POLITICAL ECONOMY. (3) (Note: The field is Comparative Politics in Developing Areas.) Incorporation of subordinate groups into national systems in the developing countries of Africa, Asia, and Latin America. Specific topics include state formation, the emergence of civil society, modernization and dependency theories, alternative development models, democracy, authoritarianism, sustainable development and gender.

POLI 648 LATIN AMERICAN POLITICS. (3) (Note: The field is Comparative Politics in Developing Areas.) This course explores changing patterns of social, economic and political relations in Latin America, especially at the level of civil society. It examines such topics as state formation, institutional development, regime transformation and the insertion of Latin American countries in both the international capitalist economy and the inter-state system.

POLI 649 MASS APPROACH POLITICAL DEVELOPMENT: CHINA. (3) (Note: The field is Comparative Politics in Developing Areas.) The strategy of political and socio-economic development in contemporary China. Topics include: cultural and ideological foundations of socialization. The consequences of the disintegration of the USSR and the socialist countries of Europe, and the balance sheet of the post-1978 reform.

POLI 650 SEMINAR IN PEACEBUILDING. (3) (Note: The field is Comparative Politics in Developing Areas and International Politics.) An examination of transitions from civil war to peace, and the role of external actors (international organizations, bilateral donors, non-governmental organizations) in support of such transitions. Topics will include the dilemmas of humanitarian relief, peacekeeping operations, refugees, the demobilization of ex-combatants, transitional elections, and the politics of socio-economic reconstruction.

POLI 651 THE EU AND POLITICAL INTEGRATION. (3) (Note: The field is Comparative Politics in Developing Areas and International Politics.) Theories from both comparative and international politics will be drawn upon to analyze the development, politics, institutions and policies of the EU. The internal political economy and external relations of the EU will be analyzed.

POLI 652 ETHNIC STRIFE AND WORLD POLITICS. (3) (Note: The field is International Politics.) Interplay between ethnic conflicts within countries and international relations. This course will address among many topics, irredentism, the causes and consequences of intervention, spillover effects and contagion, and the impact of ethnic conflict on relations between states.

POLI 659 INTERDISCIPLINARY SEMINAR: EUROPEAN STUDIES. (3) (Restriction: Only open to students in European Studies Option.) Interdisciplinary seminar on a theme relevant to the study of Europe.

POLI 670 ADVANCED TOPICS: INTERNATIONAL RELATIONS. (3) A specific problem area in International Relations.

POLI 671 INTERNATIONAL RELATIONS THEORY. (3) (Note: The field is International Politics.) This course is designed to give students a thorough background in the basic theories and models used in International Relations. It emphasizes breadth, in order to ground students in the variety of approaches employed in the field of international politics.

POLI 672 INTERNATIONAL POLITICAL ECONOMY. (3) (Note: The field is International Politics.) For students in international and comparative politics, a course in IPE in two senses: 1) the use of the economic model of purposive behaviour to examine international phenomena; 2) the politics of global economic issues such as production, trade, finance, debt, technology transfer, economic coordination. Connections between domestic political economies and the IPE, alternative strategies of state adjustment to a changing IPE.

POLI 677 INTERNATIONAL CRISIS, CONFLICT, WAR. (3) (Note: The field is International Politics.) This seminar is designed to explore the literature on the concepts of international crisis, conflict and war. Discussions will focus on: research designs and methods; decision-making models; crisis/conflict management; bargaining in crisis; UN and superpower crisis intervention; deterrence and war prevention; theories of war; and polarity, war and stability.

POLI 678 STATE BEHAVIOUR. (3) (Note: The field is International Politics.) Theoretical and empirical studies of decision-making, the policy-making process, and foreign policy behaviour. The capacity of each approach to explain and evaluate choice and behaviour will be assessed.

POLI 679 INTERNATIONAL SECURITY: CONFLICT AND CO-OPERATION. (3) (Note: The field is International Politics.) Concerns theoretical and historical literature on international security, strategy, war, and cooperation. Includes systemic, societal and normative explanations or war, peace, security, and change.

POLI 680 SOCIAL CHANGE/ADVANCED INDUSTRIALIZED DEMOCRACIES. (3) Introduction to the theories, concepts and empirical work on advanced democracies with a focus on issues of social change. Theories of the welfare states, social capital, postmaterialism, political participation, social movements and issues of diversity are studied from a variety of methodological perspectives.

POLI 688 SEMINAR ON SOCIAL STATISTICS. (3) Special topics on social statistics and presentations of ongoing research by students pursuing M.A. Option in Social Statistics in any of the participating disciplines.

POLI 690 READING IN POLITICAL SCIENCE. (3) A graduate student may take a one-term reading course per academic year in a particular field and under the supervision of a member of staff.

POLI 690D1 (1.5), POLI 690D2 (1.5) READING IN POLITICAL SCIENCE. (Students must register for both POLI 690D1 and POLI 690D2) (No credit will be given for this course unless both POLI 690D1 and POLI 690D2 are successfully completed in consecutive terms) (POLI 690D1 and POLI 690D2 together are equivalent to POLI 690) A graduate student may take a one-term reading course per academic year in a particular field and under the supervision of a member of staff.

POLI 691 BIBLIOGRAPHIC METHODS 1. (6) Research-related skills and the production of a research bibliography.

POLI 692 BIBLIOGRAPHIC METHODS 2. (6) Advanced research-related skills and the production of a research bibliography.

POLI 693 M.A. RESEARCH PROPOSAL. (3)

POLI 694 RESEARCH PREPARATION 1. (3)

POLI 695 RESEARCH PREPARATION 2. (3)

POLI 696 RESEARCH PREPARATION 3. (3)

POLI 698 MASTER'S THESIS SUBMISSION. (12) A thesis to demonstrate proficiency in research. The thesis is normally about 100 pages long, and is subject to evaluation by one examiner internal to the Department and one examiner external to the Department.

POLI 698D1 (6), POLI 698D2 (6) MASTER'S THESIS SUBMISSION. (Students must register for both POLI 698D1 and POLI 698D2) (No credit will be given for this course unless both POLI 698D1 and POLI 698D2 are successfully completed in consecutive terms) (POLI 698D1 and POLI 698D2 together are equivalent to POLI 698) A thesis to demonstrate proficiency in research. The thesis is normally about 100 pages long, and is subject to evaluation by one examiner internal to the Department and one examiner external to the Department.

POLI 699 MASTER'S RESEARCH ESSAY. (6) The Master's research paper should explore a clearly defined problem, show familiarity with the most important work previously done in the field, and demonstrate the ability to carry out research, organize results and present them in good literary style. Normally the paper will flow out of a previous graduate seminar and will be approximately 50 pages in length.

POLI 699D1 (3), POLI 699D2 (3) MASTER'S RESEARCH ESSAY. (Students must register for both POLI 699D1 and POLI 699D2) (No credit will be given for this course unless both POLI 699D1 and POLI 699D2 are successfully completed in consecutive terms) (POLI 699D1 and POLI 699D2 together are equivalent to POLI 699) The Master's research paper should explore a clearly defined problem, show familiarity with the most important work previously done in the field, and demonstrate the ability to carry out research, organize results and present them in good literary style. Normally the paper will flow out of a previous graduate seminar and will be approximately 50 pages in length.

POLI 701 PH.D. GENERAL WRITTEN EXAMINATION FIRST FIELD. (0)

POLI 702 PH.D. GENERAL WRITTEN EXAMINATION SECOND FIELD. (0)

POLI 728 RESEARCH SEMINAR IN COMPARATIVE POLITICS. (3) (Suggested prerequisites: POLI 612 and POLI 628) (Note: The field is Comparative Politics in Developed Areas.) A consideration of research on comparative politics in Western Europe and North America. Problems of research design and execution, the application of research methods, and the evaluation of findings. Selections from the literature will be examined critically.

POLI 771 INTERNATIONAL POLICY AND FOREIGN POLICY IN DEVELOPING WORLD. (3) (Prerequisites: A graduate-level course in international relations or comparative politics/developing areas) (Note: The field is Comparative Politics in Developing Areas and International Politics.) A seminar focusing on the multiple security concerns of developing states including developmental (political, economic) and traditional (military, power political) pressures; linkages between internal and external vulnerabilities; the changing security environment of the post Cold War era; alternative external/internal strategies. These issues will be examined in comparative perspective.

POLI 778 RESEARCH SEMINAR - INTERNATIONAL POLITICS. (3) (Note: The field is International Politics.) A workshop intended to help M.A. and Ph.D. students prepare their thesis proposals and chapters. Writing techniques and methodology will be covered. Students critique seminar presentations by leading scholars on their new works.

POLI 780 READING SEMINAR 1. (3) A research seminar on a topic that is not covered in the regular seminars, but which is of interest to a group of students and a faculty member. The exact topic for the research papers will be determined by mutual agreement among students and faculty members involved.

POLI 781 READING SEMINAR 2. (3) A research seminar on a topic that is not covered in the regular seminars, but which is of interest to a group of students and a faculty member. The exact topic for the research papers will be determined by mutual agreement among students and faculty members involved.

POLI 799 PH.D. ORAL COMPREHENSIVE EXAMINATION. (0)
Psychiatry.

Students in this program receive no clinical training in advanced training in areas particularly relevant to psychiatric training. The M.Sc. program in Psychiatry is designed (1) to continue to a Ph.D. The graduate program does not provide clinical psychiatry residency at McGill. Most, though not all students, construct an outline of the proposed thesis research, to be written by the prospective student in collaboration with an appropriate research supervisor.

A written agreement from the proposed research supervisor, the student's statement of purpose for seeking an M.Sc. and student's statement of purpose for seeking a Master of Science degree in Psychiatry; an outline of the proposed thesis research, to be written by the prospective student in collaboration with an appropriate research supervisor; two letters of reference with Applicant Evaluation checklist forms (see department website); TOEFL or IELTS certificate of proficiency in English for non-Canadian applicants whose mother tongue and language of education is not English, with a minimum score of 213 on the computerized TOEFL, 550 on the written TOEFL test, or 86 on the internet-based test, with each component score not less than 20, or 6.5 on the IELTS test.

69.4 Application Procedures

Applications will be considered upon delivery of the following to the Graduate Program Coordinator:
1. a completed application form;
2. CAD$100 application fee;
3. two official transcripts of all university studies;
4. a written Confirmation of Supervision form (see department website) from the proposed research supervisor;
5. a written statement of purpose, describing the specific reasons for seeking a Master of Science degree in Psychiatry;
6. an outline of the proposed thesis research, to be written by the prospective student in collaboration with an appropriate research supervisor;
7. two letters of reference with Applicant Evaluation checklist forms (see department website);
8. TOEFL or IELTS certificate of proficiency in English for non-Canadian applicants whose mother tongue and language of education is not English, with a minimum score of 213 on the computerized TOEFL, 550 on the written TOEFL test, or 86 on the internet-based test, with each component score not less than 20, or 6.5 on the IELTS test.

Dates for Guaranteed Consideration

For dates for guaranteed consideration, please consult the following website: www.mcgill.ca/gradapplicants/programs. Then select the appropriate program.

McGill’s online application form for graduate program candidates is available at www.mcgill.ca/gradapplicants/apply.

69.5 Program Requirements

M.Sc. in Psychiatry (Thesis) (45 credits)
Each student shall complete an original investigation of a scope appropriate to the presentation of a master's thesis. This thesis will be reviewed by the Supervisory Committee prior to its submission to Graduate and Postdoctoral Studies, and shall then be reviewed by external referees according to the usual regulations of Graduate and Postdoctoral Studies.

Complementary Courses (9 credits)
9 credits of graduate-level courses approved by the student's Supervisory Committee.

Courses are selected on the basis of the area of research interest and the background of the student, and must include a course in statistical analysis if not presented upon admission.

Thesis Component – Required (36 credits)

PSYT 691 (12) Thesis Research 1
PSYT 692 (12) Thesis Research 2
PSYT 693 (12) Thesis Research 3

Supervisory Committees

The M.Sc. in Psychiatry is administered by the Graduate Training Committee. Each student selects a Supervisory Committee composed of the research supervisor plus 2-4 other faculty who are knowledgeable about the student's research area and who can advise both on appropriate coursework and on the thesis research project. The student will meet with this Supervisory Committee at least once during each year of matriculation for the purpose of evaluating academic and research progress of the student. The Supervisory Committee will also act as a resource body for the student, both with respect to academic and administrative matters.

Residence

Three terms of full-time study. No part-time study allowed.

Assistant Professors
J. Armony; Ph.D.(NYU)
L. Beauclair; B.Sc., M.D.(Laval)
P. Beaudry; M.D.(Sher.), Dipl.Psych.(McG.)
D. Bloom; B.Sc.(Regina), M.D.(Qu.)
V. Bobbot; Ph.D.(Ariz.)
A. Brunet; Ph.D.(Montr.)
N. Cermakian; B.Sc.(UQTR), M.Sc., Ph.D.(Montr)
D. Charney; M.D., C.M.(McG.)
A. Crocker; Ph.D.(Montr.)
J.B. Debrulle; M.D.(Paris), Ph.D.(Univ. Pierre et Marie Curie)
M.-J. Fleury; M.A., Ph.D.(Montr)
C. Flores; Ph.D. (C’dia)
G. Galbaud du Fort; M.D., Ph.D.(Paris) (joint appt. with Epidemiology and Biostatistics)
Y. Goto; Ph.D(Tokyo)
B. Greenfield; M.D.(Wash.)
D. Groleau; B.Sc., M.Sc., Ph.D.(Montr.)
R. Gruber; B.A., M.S., Ph.D.(Tel Aviv)
R. Joober; M.D.(France), Ph.D(Tunisia)
E. Latimer; B.A.Sc.(Wat.), M.S., Ph.D.(Carn. Mell)
M. Lepage; Ph.D.(Que.)
K. Looper; B.Sc., M.D.(Ott.), M.Sc.(McG)
E. Loucks; B.Sc., Ph.D.(Br. Col.)
S. Lupien; Ph.D.(Montr.)
A. Malla; Ph.D.(W. Ont.)
M. Mechawar; B.Sc., M.Sc., Ph.D.(Montr.)
G. Myhr; M.D.,C.M., M.Sc.(McG)
L. Nadeau; M.D.(Montr.)
J. Proussner; Ph.D.(Univ. Trier)
J. Renaud; M.Sc., M.D.(Montr.)
N. Schmitz; Ph.D.(Univ. Dortmund)
B. Thomsbs; B.S.(N’western), M.A.(Ariz), Ph.D.(NYU)
S. Williams; Ph.D.(Montr.)
B. Thombs; B.S.(N’western), M.A.(Ariz), Ph.D.(NYU)
N. Schmitz; Ph.D.(Univ. Dortmund)
T.P. Wong; B.Sc.(HK), Ph.D.(McG)
P. Zelkowitz; Ph.D.(McG.)
J. Pruessner; Ph.D.(Ariz)
A. Malla; Ph.D.(W. Ont)
M. Mechawar; B.Sc., M.Sc., Ph.D.(Montr)
G. Myhr; M.D.,C.M., M.Sc.(McG)
L. Nadeau; M.D.(Montr.)
J. Proussner; Ph.D.(Univ. Trier)
J. Renaud; M.Sc., M.D.(Montr.)
N. Schmitz; Ph.D.(Univ. Dortmund)
B. Thomsbs; B.S.(N’western), M.A.(Ariz), Ph.D.(NYU)
S. Williams; Ph.D.(Montr.)
B. Thombs; B.S.(N’western), M.A.(Ariz), Ph.D.(NYU)
N. Schmitz; Ph.D.(Univ. Dortmund)
T.P. Wong; B.Sc.(HK), Ph.D.(McG)
P. Zelkowitz; Ph.D.(McG.)

Associate Member
R.O. Pihl (Psychology)

Adjunct Professors
P. Blier, L. Gaston, C. Mercier, S. Welner

69.2 Programs Offered

Master of Science (M.Sc.), ad hoc Ph.D.
The M.Sc. program in Psychiatry is designed to provide advanced research training in the basic, applied and social sciences relevant to issues in psychiatry. Applicants are admitted from a wide range of backgrounds, including undergraduate degrees in relevant areas (e.g., psychology, neuroscience, sociology, medical anthropology, nursing and medicine), and those who are pursuing their psychiatry residency at McGill. Most, though not all students, continue to a Ph.D. The graduate program does not provide clinical training. The M.Sc. program in Psychiatry is designed (1) to provide a mechanism for the training of medical scientists who intend to pursue a research career in psychiatry and (2) to provide a focus for basic science or social science students wishing to obtain advanced training in areas particularly relevant to psychiatric research. Students in this program receive no clinical training in psychiatry.

69.3 Admission Requirements

A B.Sc., B.A., B.N. or M.D. degree.

A strong background in science and/or social science, as demonstrated by academic achievement equivalent to a GPA of 3.3 (on a 4 point scale) or 3.5 in the last two years.

A written agreement from the proposed research supervisor, and student's statement of purpose for seeking an M.Sc.

An outline of the proposed thesis research, to be written by the prospective student in collaboration with an appropriate research supervisor.

Certified proficiency in written English or French.
69.6 Courses

Students preparing to register should consult Class Schedule on the web at www.mcgill.ca/student-records/register/class-schedule for the most up-to-date list of courses available; courses may have been added, rescheduled or cancelled after this Calendar was published. Class Schedule lists courses by term and includes days, times, locations, and names of instructors.

Term(s) offered (Fall, Winter, Summer) may appear after the credit weight to indicate when a course would normally be taught. Please check Class Schedule to confirm this information.

Note: All undergraduate courses administered by the Faculty of Science (courses at the 100 to 500 level) have limited enrolment. The course credit weight is given in parentheses after the title.

PSYT 500 ADVANCES: NEUROBIOLOGY OF MENTAL DISORDERS. (3) (Winter) (3 hours) (Prerequisite (Undergraduate): BIOC 212 and BIOC 311, or BIOC 312, or BIOL 200 and BIOL 201, or PHGY 311, or PSYC 308 and an upper-level biological science course with permission of the instructors, or equivalent. Basic knowledge of cellular and molecular biology is required.) (Restriction: Open to U3 and graduate students only.) (Restriction: Graduates: strongly recommended for M.Sc. students in Psychiatry.) Current theories on the neuropsychological basis of most well-known mental disorders (e.g. schizophrenia, depression, anxiety, dementia). Methods and strategies in research on genetic, physiological and biochemical factors in mental illness will be discussed. Discussion will also focus on the rationale for present treatment approaches and on promising new approaches.

PSYT 502 BRAIN EVOLUTION AND PSYCHIATRY. (3) (Fall) (Prerequisite: BIOL 115 or equivalent as authorized by instructor) The course will focus on the transcultural importance of evolution of nervous systems for normal and pathological behaviour. Studies of allometric brain growth and recent evolutionary theories of brain organization as they relate to normal and abnormal behaviour will be emphasized.

PSYT 503 MENTAL HEALTH SERVICES AND POLICY. (3) (Enrolment is limited to 14 students. The course is given in English, but papers can be handed in French) Analysis of the mental health system and its best practices.

PSYT 504 ISSUES IN FORENSIC MENTAL HEALTH. (3) (Prerequisite: Special permission of instructor.) (Enrolment limited to 30 students. The course will be taught in English, papers can be submitted in English or French.) The course will review current forensic mental health issues at the various stages the criminal justice process, clinical and behavioural specificities and vulnerabilities of special populations of offenders. It will also review risk factors for aggressive behaviour and criminality, assessment methods as well as current debates in the field of forensic mental health.

PSYT 505 NEUROBIOLOGY OF SCHIZOPHRENIA. (3) (Office hours: After class or by appointment) (Prerequisite(s): PSYC 308, BIOL 306, PHGY 314 or permission of instructor) (Restriction(s): Open to U3 and MSc students.) Multidisciplinary issues on pathogenesis and pathophysiology of schizophrenia from molecular genetics to cognitive psychology, including current theories of the disorder based on up-to-date evidence from recent research.

PSYT 515 ADVANCED STUDIES IN ADDICTION. (3) (Winter) (Prerequisite: PSYT 301 or permission from one of the instructors.) (Restriction(s): Priority will be given to graduate students registered in Psychiatry, Psychology or Neuroscience graduate programs. Open to undergraduates who have completed PSYT 301 or an equivalent course. Undergraduates must obtain permission of the instructors before registration. Not open to students who have taken PSYT 615.) Critical assessment of research tools, reported data, and theoretical perspectives on drug addiction, with an emphasis on multi-factorial and inter-disciplinary approaches.

PSYT 610 DIPLOMA EVALUATION: WRITTEN. (0)

PSYT 611 DIPLOMA EVALUATION: ORAL. (0)

PSYT 620 TRENDS IN CLINICAL PSYCHIATRY. (3) (Prerequisite: A course in research methods. Or special permission by the course instructor.) (Restriction: Not open to students who have taken PSYC 630 or equivalent.) A review of the major psychopathologies, the theories that underlie them and their treatment.

PSYT 625 QUALITATIVE RESEARCH IN HEALTH CARE. (3) (Restriction: Open to students with Bachelor’s degrees in Health or Social Science.) (Note: Course will be given in English. Course work may be submitted in English or French.) Discussion and practice of qualitative methodologies for conducting rigorous and reflective qualitative research projects in health care sector including ethnographic fieldwork and community interviews.

PSYT 630 STATISTICS FOR NEUROSCIENCES. (3) Statistics needed for analysing the types of data generated in a laboratory setting, with emphasis on the neurosciences, will be covered. Hypothesis testing, parametric and non-parametric statistics will be studied with a practical approach, using data generated by the students. Computer analysis will be introduced.

PSYT 691 THESIS RESEARCH 1. (12)

PSYT 692 THESIS RESEARCH 2. (12)

PSYT 693 THESIS RESEARCH 3. (12)

PSYT 696 SPECIAL TOPICS IN PSYCHIATRY. (3) Supervised reading and discussion of selected issues and topics in contemporary psychiatry. Students will be responsible for assigned readings and for preparation of a graded paper.

PSYT 711 CULTURAL PSYCHIATRY. (3) (Prerequisites: Knowledge of psychiatry and anthropology) Topics covered: cross-national epidemiological and ethnographic research of major and minor psychiatric disorders; culture-bound syndromes and idioms of distress; culture, emotion and social interaction; psychological and symbolic healing; mental health of immigrants and refugees; psychiatric theory and practice as cultural constructions; methods of cross-cultural research.

PSYT 713 PSYCHIATRIC EPIDEMIOLOGY. (3) (Prerequisites: EPIB 606 or equivalent or permission of instructor.) An overview of the applications of epidemiology in psychiatry, including instruments and methods used in community studies; major recent population surveys of psychiatric disorders; study of treatment-seeking, pathways to care and use of services; interaction between psychological distress and physical health; methods used in specific populations; evaluation of treatment.

70 Psychology

Department of Psychology
Stewart Biological Sciences Building, Room W8/33A
1205 Dr. Penfield Avenue
Montreal, QC H3A 1B1
Canada
Telephone: 514-398-6124 / 514-398-6100
Fax: 514-398-4896
Email: gradsec@ego.psych.mcgill.ca
Website: www.psych.mcgill.ca

Chair — K.B.J. Franklin

70.1 Staff

Emeritus Professors
A.S. Bregman; M.A.(Tor.), Ph.D.(Yale)
V. Douglas; B.A.(Qu.), M.A., M.S.W., Ph.D.(Mich.)
W.E. Lambert; M.A.(Colgate), Ph.D.(N. Carolina), F.R.S.C.
A.J. Marley; B.Sc.(Birm.), Ph.D.(Penn.)
R. Melzack; B.Sc., M.Sc., Ph.D.(McG.) (E.P. Taylor Emeritus Professor of Psychology)
P. Milner; B.Sc.(Leeds), M.Sc., Ph.D.(McG.)
70.2 Programs Offered

M.A. and M.Sc. degrees may be awarded in Experimental Psychology, but only as a stage - (undergo formal evaluation) in the Ph.D. in Experimental Psychology program.

Ph.D. in Clinical Psychology (there is no M.A. or M.Sc. program).

The aim of the Experimental program is to provide students with an environment in which they are free to develop skills and expertise that will serve during a professional career of teaching and research as a psychologist. Course work and other requirements are at a minimum. Success in the program depends on the student’s ability to organize unscheduled time for self education. Continuous involvement in research planning and execution is considered a very important component of the student’s activities. Students are normally expected to do both master’s and doctoral study.

The Clinical program adheres to the scientist practitioner model and as such is designed to train students for careers in university teaching or clinical research, and for service careers – working with children or adults in a hospital, clinical, or educational setting. Most of our clinical graduates combine service and research roles. While there are necessarily many more course requirements than in the experimental program, the emphasis is again on research training. There is no master’s program in Clinical Psychology; students are expected to complete the full program leading to a doctoral degree.

Research interests of members of the Psychology Department include animal learning, behavioural neuroscience, clinical, child development, cognitive science, health psychology, psychology of language, perception, quantitative psychology, social psychology, and personality psychology.

A cross-disciplinary option in psychosocial oncology is offered within the existing Ph.D. program in Psychology.

Facilities for advanced research in a variety of fields are available within the Department itself. In addition, arrangements exist with the Departments of Psychology at the Montreal Neurological Institute, Allan Memorial Institute, Douglas Hospital, Jewish General Hospital, Montreal Children’s Hospital and the Montreal General Hospital, to permit graduate students to undertake research in a hospital setting.

For full information about all programs and financial aid, and for application forms, contact the Graduate Program Coordinator, Department of Psychology.

Ph.D. Option in Language Acquisition (LAP)

Information about this option is available from the Department and on the web at: www.psych.mcgill.ca/lap.html.

Ph.D. Option in Psychosocial Oncology (PSO)

Information about this option is available from the Department and on the web at: www.medicine.mcgill.ca/oncology/educ_graduate_psychosocial.htm.

70.3 Admission Requirements

Admission to the graduate program depends on an evaluation of students’ research interests and their aptitude for original contributions to knowledge and, if applicable, for professional contributions in the applied field.

The usual requirement for admission is an Honours or Majors degree (B.A. or B.Sc.) in Psychology. This usually includes an introductory course plus twelve courses in psychology (each equivalent to three term hours). Courses in experimental psychology, the theoretical development of modern ideas in psychology, and statistical methods as applied to psychological problems (equivalent to an introductory course) are essential. Applicants’ knowledge of relevant biological, physical, and social sciences is considered.
Applicants who hold a bachelor's degree but who have not met these usual requirements should consult the Graduate Program Director to determine which (if any) courses must be completed before an application can be considered. Students with insufficient preparation for graduate work may register as Special students in the Faculty of Arts or the Faculty of Science, and follow an appropriate course of study. Such registration requires the permission of the Department but carries no advantage with respect to a student's eventual admission to graduate studies.

70.4 Application Procedures

Dates for Guaranteed Consideration

For dates for guaranteed consideration, please consult the following website: www.mcgill.ca/gradapplicants/programs. Then select the appropriate program.

Please take note that we no longer distribute paper applications. The following items must be submitted to apply to our program:

1. web application at www.mcgill.ca/gradapplicants/apply;
2. application fee of CAD$100, by credit card only;
3. a completed Psychology summary sheet;
4. transcripts – two official copies (sent directly from your university);
5. letters of recommendation – three letters of recommendation on institution letterhead with original signatures must be provided. There are no forms for these letters. Please remind your recommenders to include your FULL NAME on all letters;
6. GRE (Graduate Record Examination) – Official reports and a photocopy of scores on the General and Subject Graduate Record Examination (GRE). Applicants with little or no background in psychology are not required to submit scores on the subject component of the GRE. All applicants must take the GRE if they have studied in an English-speaking university. Canadians who have not studied in an English institution are not required to submit GRE. 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 a TOEFL score (www.ets.org/toefl);
7. a personal statement (sent separately or completed on the online application form, “applicant statement”). Describe in as much detail as possible your interests in psychology and your career goals. Also indicate the area of psychology that you want to study (e.g., developmental, social, etc.) and the name of one or more staff members with whom you would like to work.

Supporting documents are submitted directly to the Department of Psychology.

Graduate Admissions
Department of Psychology
McGill University
1205 Dr. Penfield Avenue
Montreal, QC H3A 1B1

Applicants should note that the deadline for many scholarships and fellowships is about four months earlier than the application deadline for the Department but carries no advantage with respect to a student's eventual admission to graduate studies.

70.5 Program Requirements

Master's (M.A. and M.Sc. Degrees – 45 credits each)

There is no M.A. or M.Sc. program in Clinical psychology. M.A. and M.Sc. degrees may be awarded in Experimental Psychology, but only as a stage - (undergo formal evaluation) in the Ph.D. program.

Candidates must demonstrate a sound knowledge of modern psychological theory, of its historical development, and of the logic of statistical methods as used in psychological research. Candidates will be expected to have an understanding of the main lines of current work in areas other than their own field of specialization. The primary concern of the candidate is research. Final standing for the degree is based mainly on the student's research progress and on the results of course work and other required assignments. All first year students, Experimental and Clinical must submit a General Comprehensive paper on a topic related to their research interests.

Ph.D.

All candidates for the Ph.D. degree must demonstrate broad scholarship, mastery of current theoretical issues in psychology and their historical development, and a detailed knowledge of their special field. Great emphasis is placed on the development of research skills, and the dissertation forms the major part of the evaluation at the Ph.D. level.

All Ph.D. 2 and 3 students must register for at least one graduate seminar each term (see course numbers PSYC 710 to PSYC 758); the seminars are conducted by different staff members each year and their content changes accordingly.

A special (doctoral) comprehensive examination is written in one of the following areas of psychology: clinical, behavioural neuroscience, learning and motivation, personality and social psychology, development and language, perception and cognition, quantitative and individual differences, or any other appropriate area.

Ph.D. in Clinical Psychology – Language Acquisition Option/Concentration

Students must satisfy all program requirements for the Ph.D. in Psychology. The Ph.D. thesis must be on a topic related to language acquisition, approved by the LAP committee.

Required Courses for the Language Acquisition Option

(8 credits)

EDSL 711 (2) Language Acquisition Issues 3
LING 710 (2) Language Acquisition Issues 2
PSYC 709 (2) Language Acquisition Issues 1
SCSD 712 (2) Language Acquisition Issues 4

Complementary Courses (9 credits)

3 credits of graduate-level statistics from courses such as: EDPE 676, EDPE 682, PSYC 650, PSYC 651; students who have taken an equivalent course in statistics, or are currently taking an equivalent course as part of their Ph.D. program requirements, will be deemed to have satisfied this requirement for the Language Acquisition Option.

At least 6 credits, two courses, selected from the following list, at least one course must be outside the Department of Psychology:

EDSL 620 (3) Critical Issues in Second Language Education
EDSL 623 (3) Second Language Learning
EDSL 624 (3) Educational Sociolinguistics
EDSL 627 (3) Classroom-Centred Second Language Research
EDSL 629 (3) Second Language Assessment
EDSL 632 (3) Second Language Literacy Development
EDSL 664 (3) Second Language Research Methods
LING 555 (3) Language Acquisition 2
LING 590 (3) Language Acquisition and Breakdown
LING 651 (3) Topics in Acquisition of Phonology
LING 655 (3) Theory of L2 Acquisition
LING 755 (3) Advanced Seminar: Language Acquisition
PSYC 561 (3) Methods: Developmental Psycholinguistics
PSYC 734 (3) Developmental Psychology and Language
PSYC 735 (3) Developmental Psychology and Language
PSYC 736 (3) Developmental Psychology and Language
PSYC 737 (3) Developmental Psychology and Language
SCSD 619 (3) Phonological Development
SCSD 632 (3) Phonological Disorders: Children
SCSD 633 (3) Language Development
SCSD 637 (3) Developmental Language Disorders 1
SCSD 643 (3) Developmental Language Disorders 2
SCSD 652 (3) Advanced Research Seminar 1
SCSD 653 (3) Advanced Research Seminar 2

Ph.D. in Psychology – Psychosocial Oncology Option/Concentration (PSO)

Ph.D. students registered in the Psychosocial Oncology Option complete the requirements for the Ph.D. in Psychology and the course work specific to this option provided in the table below. The Ph.D. thesis topic must be germane to psychosocial oncology and approved by the PSO coordinating committee.

Required Courses (6 credits)
NUR2 783 (3) Psychosocial Oncology Research
NUR2 705 (3) Palliative Care in Cancer

Complementary Course (3 credits)
One of the following courses:
PSYC 505 (3) The Psychology of Pain
PSYC 507 (3) Emotions, Stress, and Illness
PSYC 753 (3) Health Psychology Seminar 1
SWRK 609 (3) Understanding Social Care
SWRK 668 (3) Life-Threatening Illness and Bereavement

70.6 Courses

Students preparing to register should consult Class Schedule on the web at www.mcgill.ca/student-records/register/class-schedule for the most up-to-date list of courses available; courses may have been added, rescheduled or cancelled after this Calendar was published. Class Schedule lists courses by term and includes days, times, locations, and names of instructors.

Courses with numbers ending D1 and D2 are taught in two consecutive terms (most commonly Fall and Winter). Students must register for both the D1 and D2 components. No credit will be given unless both components (D1 and D2) are successfully completed in consecutive terms.

Note: All undergraduate courses administered by the Faculty of Science (courses at the 100 to 500 level) have limited enrolment.

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

PSYC 505 THE PSYCHOLOGY OF PAIN. (3) (Fall) (2 lectures; 1 conference) (Prerequisites: any two of the following: PSYC 308, PSYC 311, PSYC 318, PSYC 522, ANAT 321, BIOL 306, PHGY 314 or permission of instructor.) An introduction to pain research and theory, with emphasis on the interactions of psychological, cultural and physiological factors in pain perception. The role of these factors in clinical pain and its management by pharmacological and non-pharmacological means will be discussed.

PSYC 533 INTERNATIONAL HEALTH PSYCHOLOGY. (3) (Fall) (Pre-requisites: PSYC 305 and PSYC 215 or PSYC 429 or PSYC 304 or ANTH 227.) (Restriction: Departmental permission required.) The focus will be on health and illness in developing countries, in particular, on health problems (malnutrition, alcohol abuse, mental illness, family planning, and HIV) where psychosocial factors play a large role in the problem and the solution. Attempted solutions based on community participation, health education, non-governmental and international agencies will be discussed.

PSYC 601 MASTER’S COMPREHENSIVE. (6) Reference number for comprehensive examination written by all first-year graduate students.

PSYC 615D1 (1.5), PSYC 615D2 (1.5) DIAGNOSTIC METHODS (CHILDREN). (Students must register for both PSYC 615D1 and PSYC 615D2) (No credit will be given for this course unless both PSYC 615D1 and PSYC 615D2 are successfully completed in consecutive terms)

PSYC 616D1 (1.5), PSYC 616D2 (1.5) PRACTICUM - CHILD DIAGNOSTICS. (Students must register for both PSYC 616D1 and PSYC 616D2) (No credit will be given for this course unless both PSYC 616D1 and PSYC 616D2 are successfully completed in consecutive terms)

PSYC 617D1 (1.5), PSYC 617D2 (1.5) DIAGNOSTIC METHODS (ADULTS). (Students must register for both PSYC 617D1 and PSYC 617D2) (No credit will be given for this course unless both PSYC 617D1 and PSYC 617D2 are successfully completed in consecutive terms) (PSYC 617D1 and PSYC 617D2 together are equivalent to PSYC 617)

PSYC 618D1 (1.5), PSYC 618D2 (1.5) PRACTICUM - ADULT DIAGNOSTICS. (Students must register for both PSYC 618D1 and PSYC 618D2) (No credit will be given for this course unless both PSYC 618D1 and PSYC 618D2 are successfully completed in consecutive terms)

PSYC 620 PRACTICUM IN PSYCHOTHERAPY. (6) A professional training course including dealing with patients under supervision, and a “case conference” seminar.

PSYC 625 RESEARCH: CLINICAL PSYCHOLOGY. (3) (Summer)

PSYC 630 PSYCHOPATHOLOGY. (3) Review of major types of psychopathology with emphasis on research findings.

PSYC 641D1 (3), PSYC 641D2 (3) BEHAVIOUR DEVIATIONS. (Students must register for both PSYC 641D1 and PSYC 641D2) (No credit will be given for this course unless both PSYC 641D1 and PSYC 641D2 are successfully completed in consecutive terms) Appraisal and Modification, Psychotherapy, Theory and Research: traditional treatment modalities, cognitive therapy, family therapy, behaviour therapy, group therapy, etc.

PSYC 650 ADVANCED STATISTICS 1. (3) A course in advanced statistics with specialization in experimental design.

PSYC 651 ADVANCED STATISTICS 2. (3) A course in advanced statistics with specialization in multivariate techniques.

PSYC 660D1 (3), PSYC 660D2 (3) PSYCHOLOGY THEORY. (Students must register for both PSYC 660D1 and PSYC 660D2) (No credit will be given for this course unless both PSYC 660D1 and PSYC 660D2 are successfully completed in consecutive terms) Professors representing the various research areas within the Department discuss critical issues and developments within their fields of expertise.

PSYC 690 MASTERS RESEARCH 1. (15) Development of research topic, study and review of previous literature, preliminary experimental and/or theoretical thesis research.

PSYC 690D1 (7.5), PSYC 690D2 (7.5) MASTERS RESEARCH 1. (Students must register for both PSYC 690D1 and PSYC 690D2) (No credit will be given for this course unless both PSYC 690D1 and PSYC 690D2 are successfully completed in consecutive terms) (PSYC 690D1 and PSYC 690D2 together are equivalent to PSYC 690) Development of research topic, study and review of previous literature, preliminary experimental and/or theoretical thesis research.

PSYC 699 MASTERS RESEARCH 2. (12) Continuation of PSYC 690. Further experimental and/or theoretical research. Data analysis (as needed). Writing of thesis.

PSYC 701 DOCTORAL COMPREHENSIVE EXAMINATION. (6)

PSYC 705 RESEARCH PROJECT FOR M.SC. APPLIED. (9)
PSYC 706 CLINICAL PRACTICUM. (15)
PSYC 707 CLINICAL INTERNSHIP 1. (15)
PSYC 707D1 (7.5), PSYC 707D2 (7.5) CLINICAL INTERNSHIP 1.
(Students must register for both PSYC 707D1 and PSYC 707D2) (No credit will be given for this course unless both PSYC 707D1 and PSYC 707D2 are successfully completed in consecutive terms) (PSYC 707D1 and PSYC 707D2 together are equivalent to PSYC 707)

PSYC 707J1 CLINICAL INTERNSHIP 1. (5) (Students must also register for PSYC 707J2 and PSYC 707J3) (No credit will be given for this course unless PSYC 707J1, PSYC 707J2 and PSYC 707J3 are all successfully completed in consecutive terms) (PSYC 707J1, PSYC 707J2 and PSYC 707J3 together are equivalent to PSYC 707)

PSYC 707J2 CLINICAL INTERNSHIP 1. (5) (Prerequisite: PSYC 707J1) (Students must also register for PSYC 707J3) (No credit will be given for this course unless PSYC 707J1, PSYC 707J2 and PSYC 707J3 are all successfully completed in consecutive terms) (PSYC 707J1, PSYC 707J2 and PSYC 707J3 together are equivalent to PSYC 707)

PSYC 707J3 CLINICAL INTERNSHIP 1. (5) (Prerequisite: PSYC 707J2) (No credit will be given for this course unless PSYC 707J1, PSYC 707J2 and PSYC 707J3 are all successfully completed in consecutive terms) (PSYC 707J1, PSYC 707J2 and PSYC 707J3 together are equivalent to PSYC 707)

PSYC 708 CLINICAL INTERNSHIP 2. (15)
PSYC 708D1 (7.5), PSYC 708D2 (7.5) CLINICAL INTERNSHIP 2.
(Students must register for both PSYC 708D1 and PSYC 708D2) (No credit will be given for this course unless both PSYC 708D1 and PSYC 708D2 are successfully completed in consecutive terms) (PSYC 708D1 and PSYC 708D2 together are equivalent to PSYC 708)

PSYC 708J1 CLINICAL INTERNSHIP 2. (5) (Students must also register for PSYC 708J2 and PSYC 708J3) (No credit will be given for this course unless PSYC 708J1, PSYC 708J2 and PSYC 708J3 are all successfully completed in consecutive terms) (PSYC 708J1, PSYC 708J2 and PSYC 708J3 together are equivalent to PSYC 708)

PSYC 708J2 CLINICAL INTERNSHIP 2. (5) (Prerequisite: PSYC 708J1) (Students must also register for PSYC 708J3) (No credit will be given for this course unless PSYC 708J1, PSYC 708J2 and PSYC 708J3 are all successfully completed in consecutive terms) (PSYC 708J1, PSYC 708J2 and PSYC 708J3 together are equivalent to PSYC 708)

PSYC 708J3 CLINICAL INTERNSHIP 2. (5) (Prerequisite: PSYC 708J2) (No credit will be given for this course unless PSYC 708J1, PSYC 708J2 and PSYC 708J3 are all successfully completed in consecutive terms) (PSYC 708J1, PSYC 708J2 and PSYC 708J3 together are equivalent to PSYC 708)

PSYC 709 LANGUAGE ACQUISITION ISSUES 1. (2)
PSYC 710 COMPARATIVE AND PHYSIOLOGICAL PSYCHOLOGY 1. (3)
PSYC 711 COMPARATIVE AND PHYSIOLOGICAL PSYCHOLOGY 2. (3)
PSYC 712 COMPARATIVE AND PHYSIOLOGICAL PSYCHOLOGY 3. (3)
PSYC 713 COMPARATIVE AND PHYSIOLOGICAL PSYCHOLOGY 4. (3)
PSYC 714 COMPARATIVE AND PHYSIOLOGICAL PSYCHOLOGY 5. (3)
PSYC 715 COMPARATIVE AND PHYSIOLOGICAL PSYCHOLOGY 6. (3)
PSYC 722 PERSONALITY AND SOCIAL PSYCHOLOGY. (3)
PSYC 723 PERSONALITY AND SOCIAL PSYCHOLOGY. (3)
PSYC 724 PERSONALITY AND SOCIAL PSYCHOLOGY. (3)
PSYC 725 PERSONALITY AND SOCIAL PSYCHOLOGY. (3)
PSYC 726 PERSONALITY AND SOCIAL PSYCHOLOGY. (3)
PSYC 727 PERSONALITY AND SOCIAL PSYCHOLOGY. (3)

PSYC 728 ETHICS AND PROFESSIONAL ISSUES. (3) (Restriction: Permission of instructor.) Clinical psychology as a profession, with particular emphasis on ethical issues.

PSYC 729 THEORY OF ASSESSMENT. (3) (Restriction: Permission of instructor.) Issues related to psychological measurement and assessment.

PSYC 730 CLINICAL NEUROSCIENCE METHODS. (3) (Restriction: Permission of instructor.) Techniques used in the study of biological aspects of clinical disorders, including methods in epidemiology, course and outcome, behavioural and molecular genetics, neuroimaging, psychophysiology and psychopharmacology.

PSYC 732 CLINICAL PSYCHOLOGY 1. (3)
PSYC 733 CLINICAL PSYCHOLOGY 2. (3)
PSYC 734 DEVELOPMENTAL PSYCHOLOGY AND LANGUAGE. (3)
PSYC 736 DEVELOPMENTAL PSYCHOLOGY AND LANGUAGE. (3)
PSYC 740 PERCEPTION AND COGNITION. (3)
PSYC 741 PERCEPTION AND COGNITION. (3)
PSYC 742 PERCEPTION AND COGNITION. (3)
PSYC 743 PERCEPTION AND COGNITION. (3)
PSYC 744 PERCEPTION AND COGNITION. (3)
PSYC 745 PERCEPTION AND COGNITION. (3)
PSYC 746 QUANTITATIVE AND INDIVIDUAL DIFFERENCES. (3)
PSYC 747 QUANTITATIVE AND INDIVIDUAL DIFFERENCES. (3)
PSYC 748 QUANTITATIVE AND INDIVIDUAL DIFFERENCES. (3)
PSYC 749 QUANTITATIVE AND INDIVIDUAL DIFFERENCES. (3)
PSYC 750 QUANTITATIVE AND INDIVIDUAL DIFFERENCES. (3)
PSYC 751 QUANTITATIVE AND INDIVIDUAL DIFFERENCES. (3)
PSYC 752D1 (3), PSYC 752D2 (3) PSYCHOTHERAPY AND BEHAVIOUR CHANGE. (Students must register for both PSYC 752D1 and PSYC 752D2) (No credit will be given for this course unless both PSYC 752D1 and PSYC 752D2 are successfully completed in consecutive terms) A practice-oriented course. Staff and students discuss current cases being treated with a variety of psychotherapeutic and behavioural change techniques.

PSYC 753 HEALTH PSYCHOLOGY SEMINAR 1. (3)
PSYC 797 TEACHING METHODS: PSYCHOLOGY 1. (3) Development of teaching skills for graduate students in psychology under the supervision of academic staff. Relevant skills: stating objectives and sequencing content; preparation and delivery of lectures; running discussion and laboratory sessions; techniques for preparing, marking and assessing evaluation instruments; obtaining feedback on teaching skills.

71 Quebec Studies/Études sur le Québec

Quebec Studies Program / Programme d'études sur le Québec

Ferrier Building
840 Dr. Penfield Avenue, Room 332
Montreal, QC H3A 1A4
Canada

Telephone: 514-398-3960
Fax: 514-398-3959
Website: www.mcgill.ca/qcst

Director — Jarrett Rudy; B.A., M.A.(Ott.), Ph.D.(McG.)

Québec Studies Coordinator and Assistant to the Director — Stéphan Gervais

In 1963, McGill University established a French Canada Studies Program. Some of the energies and resources of the Program are devoted to research on Quebec and French Canada. In 1992, the name of the program was changed to Quebec Studies to reflect its central focus.
The program is offered at the undergraduate level. Should their main field of study be Quebec, graduate students must apply to the relevant departments.

Graduate students taking courses dealing in whole or in part with Quebec, or who are studying Quebec as their special field of study, are welcome to make use of the facilities of the Quebec Studies Program.

En 1963, le Programme d'études canadiennes-françaises fut créé à l'Université McGill. En collaboration avec les autres départements de l'Université, le programme a notamment pour but de développer la recherche sur divers aspects du Québec et du Canada français. Depuis 1992, l'appellation du programme a été modifiée pour celle de programme d'études sur le Québec afin de refléter clairement les objectifs poursuivis.

Les activités du programme se concentrent au premier cycle. Les étudiants qui désirent poursuivre des études en vue de l'obtention d'une maîtrise ou d'un doctorat portant sur le Québec doivent s'adresser aux départements concernés.

Les étudiants dont les cours portent, en tout ou en partie, sur le Québec ou qui se spécialisent dans ce domaine, sont toutefois invités à se prévaloir des services du Programme d'études sur le Québec.

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**72 Redpath Museum**

Redpath Museum, Room 102
859 Sherbrooke St. W.
Montreal, QC H3A 2K6
Telephone: 514-398-4086
Fax: 514-398-3185
Website: www.mcgill.ca/redpath

**Director — David M. Green**

**72.1 Staff**

*Emeritus Professor*
Robert L. Carroll; B.Sc.(Mich.), Ph.D.(Harv.), F.R.S.C., F.L.S.

*Professor*
David M. Green; B.Sc.(Br. Col.), M.Sc., Ph.D.(Guelph), F.L.S.

*Associate Professors*
Brian J. Alters; B.Sc., Ph.D.(S. Calif.) (*Associate Professors McGill University, Graduate and Postdoctoral Studies 2009-2010* 445
Andrew Hendry; B.Sc.(Vic. (BC)), M.Sc., Ph.D.(Wash.) (*Professor*)
Hans C.E. Larsson; B.Sc.(McG.), Ph.D.(Chic.) (*Adjunct Professors*)
Anthony Ricciardi; B.Sc.(Agr.), M.Sc., Ph.D.(McG.) (*CRC Tier 2 Chair in Paleontology*)

*Assistant Professors*
Claire de Mazancourt; Bacc.(École des Mines), DEA, Ph.D.(Paris VI)
Brian Leung; B.Sc.(Br. Col.), Ph.D.(Car.) (*joint appt. with Biology & MSE*)
Virginie Millien; Maîtrise(Paris VI), DEA, Ph.D.(Montpellier II)

*Curator*
Karen E. Samonds; B.S., B.A.(Mass.), M.Phil., M.A., Ph.D.(Stony Brook) (*joint appt. with Anatomy & Dentistry*)

*Faculty Lecturer*
Linda Cooper; B.A.(C'dia), M.A.(McM.)

*Associate Members*
Biology: Graham A.C. Bell
Earth & Planetary Sciences: Jeanne Paquette

*Adjunct Professors*
Hendy M. Reiswig, Hans Hofmann, Robert Holmes, Michael Woloch

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**72.2 Programs Offered**

The Redpath Museum is a unique interdisciplinary unit within the Faculty of Science and the centre for teaching and research on the history and diversity of life. It houses and displays large collections of ancient and modern organisms, minerals, and ethno- logical artefacts. Its mandate includes geological, biological and cultural diversity, and science education.

The Museum has an active graduate training program devoted to research in biosystematics, ecology, conservation biology and evolutionary biology leading to M.Sc. and Ph.D. degrees. Students are primarily enrolled in McGill's Department of Biology but the Museum also supports the research of graduate students enrolled in other departments, including the Department of Earth and Planetary Sciences and the Department of Anthropology and the Faculty of Education. Anyone interested should contact the department concerned.

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**72.3 Courses Offered**

Students preparing to register should consult Class Schedule on the web at [www.mcgill.ca/student-records/register/class-schedule](http://www.mcgill.ca/student-records/register/class-schedule) for the most up-to-date list of courses available; courses may have been added, rescheduled or cancelled after this Calendar was published. Class Schedule lists courses by term and includes days, times, locations, and names of instructors.

The Redpath Museum offers courses in science writing to graduate students.

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

**REDM 610 Writing Science Articles 1.** (3) (Prerequisite: Permission of instructor.) (Restrictions: Restricted to graduate students in the Faculty of Science; graduate students from other faculties considered, space permitting. Enrolment is limited to 12 students. The language of instruction is English and it is not intended as an ESL course. Course is graded pass/fail.) Principles and techniques for clear scientific writing with an emphasis on how to transform complex ideas into direct and precise ones by explaining research to peers and writing for interdisciplinary audiences.

**REDM 710 Writing Science Articles 2.** (3) (Prerequisite: Permission of instructor.) (Restrictions: Restricted to Ph.D. students in the Faculty of Science; M.Sc. students from the Faculty of Science and Ph.D. students from other faculties considered, space permitting. Enrolment is limited to 12 students. The language of instruction is English and it is not intended as an ESL course. Course is graded pass/fail.) Skills for writing and publishing scientific articles, including peer-reviewed manuscripts and short, critical reviews of published articles. Topics include techniques for developing logical arguments and writing publishable manuscripts.

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**73 Religious Studies**

Faculty of Religious Studies
William and Henry Birks Building
3520 University Street
Montreal, QC H3A 2A7
Canada
Telephone: 514-398-4121
Fax: 514-398-6665
Website: [www.mcgill.ca/religiousstudies](http://www.mcgill.ca/religiousstudies)

Dean, Faculty of Religious Studies — Ellen B. Aitken

Graduate Program Chair — G. Victor Hori

Graduate Admissions Chair — Patricia G. Kirkpatrick
73.1 Staff

Emeritus Professors

G.B. Baum; B.A.(McM.), M.A.(Ohio), D.Th.(Fribourg)

Post-Retirement

R.C. Culley; B.A.(Tor.), B.D.(Knox, Tor.), M.A., Ph.D.(Tor.), D.D.(Montr. Dio.Coll.)
Frederik Wisse; Ing.(Utrecht), B.A., B.D.(Calvin, Mich.), Ph.D. (Claremont)

Professors

M. Boutin; B.A., B.A. (Montr.), D.Th.(Munich)
J.W. McConnell Professor of Philosophy of Religion
T. Kirby; B.A.(KCNs); M.A.(Dal.); D.Phil.(Oxf.)
G.S. Oegema; B.A., Th.D.(Vrije Universiteit, Amsterdam); M.A., Ph.D.(Free Univ., Berlin), Dr. Theol. Habil(Tübingen)
A. Sharma; B.A.(Allad.), M.A.(Syr.), M.T.S., Ph.D.(Harv.) (Henry Birks Professor of Comparative Religion)
K.K. Young; B.A.(Vermont), M.A., B.D.(McG.) (James McGill Professor of Hinduism/Comparative Religion)

Associate Professors

E.B. Aitken; A.B. (Harv.), M.Div.(Univ. of the South), Th.D.(Harv.)
D.B. Farrow; B.R.E.(Providence), M.Div.(Grace), M.Th.(Regent), Ph.D.(Lond.)
G. Fiasse; B.A., M.A., Ph.D.(Louvain) joint appt. with Department of Philosophy
I.H. Henderson; B.A.(Man.), B.D.(St. And.), M.A.(McM.), D.Phil.(Oxf.)
G.V. Hori; B.A.(York), M.A.(Tor.), Ph.D.(Stan.)

Assistant Professors

L. Braitsstein; B.A., M.A., Ph.D.(McG)
Daniel Cere; B.A., M.A.(McG), Ph.D.(C’dia)
D. Soneji; B.A.(Manit.), Ph.D.(McG)

Faculty Lecturer

J. Kanaris; B.A.(C’dia), M.A., Ph.D.(McG)
Fabian Udoh; B.Phil.(Institut de Philosophie, Kinshasa), S.T.B.(Pontificia Universitas Gregoriana), M.Phil.(Oxf.), Ph.D.(Duke) New Testament Studies

Numata Visiting Professor

Miriam Levering; Ph.D.(Harv.)

Adjunct Professors

Philip Joudrey; William Klempa; T. Jinpa Langri; Vanessa Sasson; John M. Simons; John Vissers

73.2 Programs Offered

The Faculty of Religious Studies offers programs leading to the degrees of Master of Arts (M.A.) (Thesis and Non-Thesis), Master of Arts (M.A.) (Thesis) with Specialization in Bioethics, Master of Sacred Theology (S.T.M.) and Doctor of Philosophy (Ph.D.).

The purpose of the M.A. (Thesis) degree is to encourage advanced study and research in one of the disciplines of religious studies (see below) for those who wish to become scholars or teachers, or will be engaged in some field of religious or public service. An option in the M.A. (Thesis) program is the M.A. in Religious Studies with specialization in Bioethics offered in collaboration with the Bioethics Unit, see section 9, “Bioethics”.

The M.A. without thesis is intended to ensure a student’s well-rounded exposure to several religions and to several of the disciplinary approaches currently used in their academic study. The S.T.M. is meant for those who intend to enter the ministry of the Christian Church or another religious institution, or proceed to a teaching career or to some form of social work. The S.T.M. program is fully accredited by the Association of Theological Schools in the U.S. and Canada.

The purpose of the Ph.D. program is to engage students in advanced academic studies normally in preparation for an academic career.

Adequate library facilities are available in the William and Henry Birks Building and elsewhere in the University for the courses listed, and for research.

The following areas of research are offered:

- Biblical Studies Area:
  - Hebrew Bible and Old Testament Studies;
  - Greco-Roman Judaism;
- History and Theology Area:
  - Church History;
  - Christian Theology.
- Religion and Culture Area:
  - Philosophy of Religion;
  - Religious Ethics;
  - Biomedical Ethics.
- Asian Religions Area:
  - Hinduism;
  - Buddhism.

The M.A. (Thesis) with specialization in Bioethics is offered in conjunction with the Bioethics Unit.

73.3 Admission Requirements

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

Applicants must possess a B.A. with a Major or Honours in Religious Studies or a Bachelor of Theology (B.Th.), or a Master of Divinity (M.Div.) degree, normally with a minimum CGPA of 3.3/4.0 (B+) from an accredited university or college. Applicants with fewer than 30 appropriate credits in Religious Studies or Theology are normally required to take a Qualifying Program before entering the M.A.

Master of Arts (M.A.) (Thesis) in Religious Studies with specialization in Bioethics – for information contact the Chair, Master’s Specialization in Bioethics, Biomedical Ethics Unit, 3690 Peel Street, Montreal, QC, H3A 1W9. Telephone: 514-398-6980. Fax: 514-398-8349. Email: jennifer.fishman@mcgill.ca.

Master of Arts (M.A.) (Non-Thesis)

Applicants must possess a B.A. with a Major or Honours in Religious Studies or a Bachelor of Theology (B.Th.), or a Master of Divinity (M.Div.) degree, normally with a minimum CGPA of 3.3/4.0 (B+) from an accredited university or college. Applicants with fewer than 30 appropriate credits in Religious Studies or Theology are normally required to take a Qualifying Program before entering the M.A.

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

Applicants must possess a B.A., normally with at least a good second class standing (B+ or CGPA 3.3/4.0), in a major or honours program in religious studies or theology from an accredited university or college. Those who have a McGill B.Th. or an equivalent degree in addition to a B.A. degree with a second class standing may be admitted to the second year of the S.T.M. program.

Doctor of Philosophy (Ph.D.)

Entry into the doctoral program is limited to applicants who have earned an academic master's degree in Religious Studies or Theology in a recognized graduate program, or those who have finished the course requirements of such a program with a minimum CGPA of 3.5/4.0.

Advanced standing (Ph.D. 2) may be granted if the completed master's-level work including a thesis is in the same area as that of the intended doctoral specialization and involved not less than six (6) courses (18 credits).
It is recommended that a foreign language related to the area of study be included in the bachelor’s or master’s work preceding doctoral study.

Applicants for doctoral programs are requested to submit a substantial sample of their scholarly writing (15-20 pages) with their application. The application should specify one of the specializations listed in section 73.2 “Programs Offered”.

73.4 Application Procedures

Application forms for admission are available at www.mcgill.ca/gradapplicants/apply. Applications are completed online and submitted electronically. All supporting documents must be submitted to the Graduate Admissions Office of the Faculty of Religious Studies.

The following items must be submitted before the application can be considered by the Faculty’s Graduate Admissions Committee:
1. application form;
2. non-refundable $100 application fee (credit card, Canadian certified cheque or money order);
3. two copies of the official transcripts of all post-secondary courses taken and degrees completed;
4. two academic letters of recommendation addressed to the Chair of the Graduate Admissions committee;
5. a statement of intent of approximately 500 words;
6. a sample of recent academic writing;
7. non-Canadian applicants whose mother tongue is not English and who have not completed an undergraduate degree from a recognized institution where English is the language of instruction must submit documented proof of competency in oral and written English, e.g., TOEFL (Test of English as a Foreign Language) with a minimum score of 777 on the paper-based test (233 on the computer-based test.).

Permanent residents may be required to submit a TOEFL score.

Dates for Guaranteed Consideration

For dates for guaranteed consideration, please consult the following website: www.mcgill.ca/gradapplicants/programs. Then select the appropriate program.

For funding consideration: the application for September admission must be submitted by February 1. For general admission, please consult the dates for guaranteed consideration.

Note: We are not willing to consider any applications to be admitted for the Winter term for the M.A. Bioethics option.

73.5 Program Requirements

Language Requirements

The Faculty of Religious Studies offers courses in primary text source languages, such as Biblical Hebrew, Aramaic, Biblical Greek, Sanskrit, Pali, Tamil and classical literary Tibetan. The Faculty does not guarantee instruction in any languages other than those mentioned above. Therefore, if a student wishes to have a language such as French, German or Japanese counted as a second language, instruction may have to be sought outside the Faculty. The successful completion of at least twelve credits at the post-secondary level in a language course, or successful completion of a language examination administered by the appropriate member of the Faculty, will constitute evidence of the student's having the required reading knowledge of the language in question.

M.A.

Students are required to give their area committee evidence of reading knowledge of a scholarly language other than English. This language may be either a modern language in which there is a significant amount of scholarship relevant to the student's area of research, or a classical language relevant to the student's area of research. If a classical language is chosen, it must be in addition to any prerequisite language for the area in question.

Note: The M.A. with specialization in Bioethics has no language requirement.

Ph.D.

Students are required to give their area committee evidence of reading knowledge of two languages other than English. These languages must be chosen from modern languages in which there is a significant amount of scholarship relevant to the student's area of research or classical languages relevant to the student's area of research.

Research in some disciplines, or on certain thesis topics, may require proficiency in more than two languages besides English. In that case, additional language requirements may be stipulated by the supervisor.

S.T.M.

The S.T.M. program has no language requirement.

MASTER OF ARTS (M.A.) (Thesis) (45 credits)

The normal residence requirement is three terms of full-time resident study. Students may apply to do the third term during the Summer of their first year. Students may also register on a half-time basis.

Candidates are required to complete satisfactorily a minimum of six, one-term courses (18 credits) and write a thesis (27 credits) embodying the results of their research. The minimum pass mark in courses is B- for M.A. students.

Research may be undertaken in the areas of specialization listed in section 73.2 “Programs Offered”.

All students must consult with an adviser in the chosen area of study for selection of courses before registration.

Candidates who have studied only one major religious tradition before entering the M.A. program are recommended to do some course work in another major religious tradition. It may prove appropriate for a student to take one or more graduate seminars in other McGill departments, e.g., in Jewish Studies, Classics, Philosophy, East Asian Studies. Access is also possible to courses in the other universities in Montreal with the approval of the Graduate Committee and the GPS.

For language requirements, see above.

A thesis proposal (approved by the supervisor) must be submitted to the Graduate Committee for approval.

The dissertation may be submitted at the end of the third term provided all course work and language requirements have been successfully completed. Candidates must complete the degree within three years of initial full-time registration. A maximum one year extension may be granted.

Required Courses (30 credits)

RELG 645 (3) Methods in Religious Studies
RELG 688 (3) Thesis Research 1
RELG 689 (3) Thesis Research 2
RELG 698 (9) Thesis Research 3
RELG 699 (12) Thesis Research 4

Complementary Courses (15 credits)

15 credits selected from the 500- or 600-level courses accepted by the Faculty of Religious Studies for the granting of a master's degree.

Master of Arts (M.A.) (Thesis) in Religious Studies with specialization in Bioethics

The curriculum is composed of required courses (6 credits) offered in the Bioethics Unit, bioethics courses (6 credit minimum) offered by the base faculty or department and any graduate courses required or accepted by a base faculty for the granting of a master's degree, for a total of 21 credits. A minimum of 45 credits is required including the thesis.

Registration requirements: depending upon the requirements of the base discipline, a minimum of three terms is required for completion of the program, including course work and thesis.
All students must consult with an adviser in the chosen area of study for selection of courses before registration.

Thesis supervision: thesis supervision for students in the specialization is provided by a participating faculty member in the program. Those students whose supervisors are not appointed to a student's base discipline will have a co-supervisor appointed from the base discipline. Thesis examination will be conducted according to the base discipline norms.

**Required Courses – Biomedical Ethics Unit** (6 credits)
BIOE 680  (3) Bioethical Theory
BIOE 681  (3) Bioethics Practicum

**Required Courses – Faculty of Religious Studies** (6 credits)
RELG 571  (3) Religion and Medicine
RELG 645  (3) Methods in Religious Studies

**Complementary Courses** (9 credits)
9 credits, at the 500 or 600 level, deemed necessary or accepted by the base faculty for the granting of a master's degree, in consultation with the supervisor.

**Thesis Component – Required** (24 credits)
BIOE 690  (3) M.Sc. Thesis Literature Survey
BIOE 691  (3) M.Sc. Thesis Research Proposal
BIOE 693  (12) M.Sc. Thesis

**MASTER OF ARTS (M.A.) (Non-Thesis)** (45 credits)
The normal residence requirement is three terms of full-time residency. Students may apply to do the third term during the Summer of their first year. Students may also register on a part-time basis.

The program requires completing a total of 45 credits taken at the 500 and 600 level. The student is required to take 36 credits in course work, normally by taking four courses per term for three terms. The minimum pass mark in courses is B- for M.A. students. Candidates who have studied only one major religious tradition before entering the M.A. program are recommended to do some course work in another major religious tradition.

For language requirements, see above.

All students must consult with a faculty adviser for selection of courses before registration.

The remaining 9 credits are to be earned by writing three research papers, each based on a reading list. Of these papers, one is to be in one specific religious tradition, a second in another religious tradition different from the first, and the third in methods used in the comparative study of religions. Each of these papers is worth three credits and each is graded on a PASS/FAIL basis.

**Required Courses** (15 credits)
RELG 555  (3) Honours Seminar
RELG 645  (3) Methods in Religious Studies
RELG 660  (3) M.A. Research Paper 1
RELG 661  (3) M.A. Research Paper 2
RELG 662  (3) M.A. Research Paper 3

**Complementary Courses** (30 credits)
30 credits of courses selected from the 500- or 600-level courses accepted by the Faculty of Religious Studies for the granting of a master's degree.

**MASTER OF SACRED THEOLOGY (S.T.M.)** (48 credits)

**ATS Accreditation:** The S.T.M. program is fully accredited by the Association of Theological Schools in the U.S. and Canada.

The normal requirement is two years (of two terms each) of full-time study (or one year of full-time study for those admitted with advanced standing into S.T.M. 2), but the degree may, by permission, be taken on a part-time basis.

**Note:** Ordination requirements for S.T.M. graduates will normally involve a further year of professional pastoral studies (the In-Ministry Year) provided by the Montreal School of Theology affiliated with the Faculty of Religious Studies.

Candidates are required to complete satisfactorily twelve one-term courses (36 credits) and pass four Area Studies courses (12 credits) chosen from the following areas:

1) Biblical Theology (RELG 520)
2) Church History (RELG 530)
3) Christian Theology (RELG 531)
4) Philosophy of Religion (RELG 540)
5) Theological Ethics (RELG 541)
6) Comparative Religion (RELG 550)

Normally six 3-credit courses and two Area Studies courses shall be taken in each academic year. The pass mark in courses is B- for S.T.M. students. Normally graduate courses should be chosen from at least four different specialty areas in Religious Studies.

**N.B.:** S.T.M. students are normally not permitted to take special studies courses.

Applicants who are admitted directly into S.T.M. 2 are required to complete six one-term courses (18 credits) and two Area Studies (6 credits).

Students who take the S.T.M. as part of their ordination requirements are to choose their courses in consultation with the Principal of the Theological College with which they are associated. Course selection for all S.T.M. students needs the approval of the Chair of the Religious Studies Graduate Committee.

Courses are offered by the Department in the areas of specialization listed in section 73.2 “Programs Offered”.

Related courses are also available in other departments. The S.T.M. has no language requirement.

**DOCTOR OF PHILOSOPHY (PH.D.)**

Candidates admitted to Ph.D. 1 must be registered on a full-time basis for 4 consecutive years (8 terms) and candidates admitted to Ph.D. 2 must be registered on a full-time basis for 3 consecutive years (6 terms), after which they will continue as additional session students until completion of the program. Half-time study may be permitted upon request. (Refer to the Graduate and Postdoctoral Studies Calendar section 4.2.1 “Residence Requirements – Doctoral” for the definition of the residency.)

Candidates admitted to Ph.D. 1 take a minimum six graduate seminars during their first year and four seminars during their Ph.D. 2 year; those admitted to Ph.D. 2 must take a minimum of four graduate seminars. If possible, two seminars should be in their area of specialization, and at least one should be at the 700 level.

**Supervision:** One of the professors in the area of specialization acts as program adviser of each candidate in that area until a thesis supervisor is selected. Candidates must meet with their adviser or supervisor prior to registration to select their courses and to obtain advice concerning the requirements they are obliged to meet (e.g., courses, modern languages, ancient languages, and comprehensive examinations). A thesis proposal (approved by the supervisor) must be submitted to the Religious Studies Graduate Committee for approval by the time the course work is finished, or as soon as possible afterwards. The candidate is expected to be present for the discussion of the proposal. The thesis should be submitted by the end of the Ph.D. 6 year. Further registration will not be allowed after Ph.D. 7 without prior approval of the Faculty of Religious Studies and Graduate and Postdoctoral Studies.

**Comprehensive Examinations:** These examinations are designed to ensure that candidates are adequately prepared to undertake the research required for a doctoral thesis and to teach university-level courses in their chosen field. They are meant to test students’ competence in: 1) their chosen field, 2) one or two cognate areas. The latter are areas related to the chosen field and are to be determined by the supervisor in consultation with the candidate. Comprehensives may take the form of a written examination, a major essay, a project, an oral examination, or a combination of these. For further details, refer to “Guidelines for
Comprehensive Examinations” on the website at www.mcgill.ca/religiousstudies/graduate/guidelines.

Doctoral Colloquium (Doktorklub): As one of their requirements, all Ph.D. students in residence shall attend the monthly graduate colloquium, at which time a student’s thesis project is formally presented and discussed.

73.6 Courses

Students preparing to register should consult Class Schedule on the web at www.mcgill.ca/student-records/register/class-schedule for the most up-to-date list of courses available; courses may have been added, rescheduled or cancelled after this Calendar was published. Class Schedule lists courses by term and includes days, times, locations, and names of instructors.

Term(s) offered (Fall, Winter, Summer) may appear after the credit weight to indicate when a course would normally be taught. Please check Class Schedule to confirm this information.

Courses with numbers ending D1 and D2 are taught in two consecutive terms (most commonly Fall and Winter). Students must register for both the D1 and D2 components. No credit will be given unless both components (D1 and D2) are successfully completed in consecutive terms.

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

★ Denotes courses taught only in alternate years.

BIBLICAL AREA

RELG 501 HONOURS SEMINAR. (3)

RELG 520 BIBLICAL THEOLOGY. (3) (Fall and Winter) (Restriction: Limited to S.T.M. students.) Tutorials and guided reading in the field of Biblical Theology.

RELG 601 ANCIENT JEWISH LITERATURE. (3) An examination of current theories of the origin and development of Greco-Roman Judaism with special attention to the treatment of non-canonical Jewish writings, e.g., the Pseudepigrapha and the Qumran Scrolls.

RELG 602 THEORY IN RELIGIOUS ETHICS. (3) Basic theories in philosophical and religious ethics.

RELG 603 PRIMARY TEXT: AKKADIAN. (3) (Prerequisite: Basic reading knowledge of Akkadian or permission of instructor.) Religious texts in Akkadian, with particular attention to the problems of translation and interpretation as they apply to the student’s thesis research.

RELG 604 FORMATION: POST-EXILIC JUDAISM. (3) An examination of Exilic and post-Exilic biblical materials (in English) that throw light on the cultural milieu and the historical experience out of which rabbinic Judaism arose.

RELG 605 INTERPRETERS OF RELIGION AND FAITH OF ANCIENT ISRAEL. (3) A study of how the biblical tradition has been analyzed and evaluated by outstanding scholars.

RELG 606 STUDIES IN BIBLICAL POETRY. (3) Based on English translations.

RELG 607 STUDIES: BIBLICAL NARRATIVE TRADITIONS. (3)

RELG 611 PAULINE THEOLOGY. (3) A study of the nature, background, origins, development and expression of the theological ideas in the Pauline literature and the connection between these ideas and other early Christian thought.

RELG 613 THE MINISTRY OF JESUS. (3) A study of the Synoptic Presentation of the Aims, Teaching and Achievement of Jesus of Nazareth.


RELG 640 PRIMARY TEXT: BIBLICAL HEBREW. (3) (Prerequisite: Basic reading knowledge of Biblical Hebrew or permission of instructor.) Religious texts in Biblical Hebrew, with particular attention to the problems of translation and interpretation as they relate to the student’s thesis research.

RELG 649 PRIMARY TEXT: COPTIC. (3) (Prerequisite: RELG 280 or equivalent; Basic reading knowledge of Coptic or permission of instructor) Religious texts in Coptic, with particular attention to the problems of translation and interpretation as they apply to the student's thesis research.

JWST 510 JEWISH BIBLE INTERPRETATION 1. (3) (Restriction: Not open to students who have taken JWST 512) The issues, approaches, and texts of Jewish Bible interpretation between the Biblical and Talmudic eras: Bible interpretation in the Bible; in Greco-Roman Jewish literature; in the Mishnah, Tosefta, Targumim, and Talmudim; early Samaritan interpretation, Bible interpretation in ancient synagogue art, and in the massoretic literature.

JWST 511 JEWISH BIBLE INTERPRETATION 2. (3) (Restriction: Not open to students who have taken JWST 512) The issues, problems, approaches, and texts of Jewish Bible interpretation in medieval, renaissance, early modern, and modern times. Interpretation in the Geonic, Ashkenazi, Sephardic, North African, Italian, European, Yemenite, North American and Israeli centres of Jewish Learning.

HISTORY AND THEOLOGY AREA

RELG 530 CHURCH HISTORY. (3) (Fall and Winter) Limited to S.T.M. students. Tutorials and guided reading in the field of church history.

RELG 531 CHRISTIAN THEOLOGY. (3) (Fall and Winter) Limited to S.T.M. students. Tutorials and guided reading in the field of Christian Theology.

RELG 532 HISTORY OF CHRISTIAN THOUGHT 1. (3) (Prerequisite: At least six (6) credits at the 300 level in Christianity or the Christian Bible.) (Restriction: Not open to students who have taken RELG 320) The development of Christian theology in the Patristic and Medieval periods. Focus on the controversial development of Christian doctrines and disciplines through intensive exposure to primary texts.

RELG 533 HISTORY OF CHRISTIAN THOUGHT 2. (3) (Prerequisite: At least six (6) credits at the 300 level in Christianity or the Christian Bible.) (Restriction: Not open to students who have taken RELG 327) The development of Christian theology in the Reformation, Post Reformation and Modern periods through intensive exposure to primary texts.

RELG 621 PATRISTIC STUDIES. (3) (Restrictions: M.A., S.T.M., or Ph.D. students only) Selected texts of patristic theology and history of the early Christian Church from Irenaeus to Boethius.

RELG 622 MEDIEVAL STUDIES. (3) (Restrictions: M.A., S.T.M., or Ph.D. students only) Selected religious and theological texts from Boethius to Nicholas of Cusa.

RELG 624 REFORMATION STUDIES. (3) (Restrictions: M.A., S.T.M., Ph.D. students only) Not open to students who have taken RELG 731) Selected texts of Reformation and Counter-Reformation theology and history.

RELG 629 PRIMARY TEXT: ARAMAIC. (3) (Prerequisite: Basic reading knowledge of Aramaic or permission of instructor) Religious texts in Aramaic, with particular attention to the problems of translation and interpretation as they apply to the student's thesis research.

RELG 630 THEOLOGICAL FOUNDATIONS. (3) Readings and discussions of theologians from the formative periods of Christian thought, with attention to the history of philosophy, ethics and dogma.

RELG 631 THEOLOGY OF THE CROSS. (3) The tradition Luther called Theologia Crucis as an appropriate theological response to the experience of the dominant culture of this continent.
RELG 633 THEOLOGY OF KARL BARTH. (3) Extensive reading and discussion of Part IV of the Church Dogmatics with special reference to Barth's Christology, doctrine of sin, ecclesiology, eschatology and doctrine of Christian life.

RELG 634 MOVEMENTS IN CONTEMPORARY THEOLOGY. (3) Readings and discussion of theologians of the first half of the twentieth century, especially the Niebuhrs, Barth, Brunner, Tillich, Bonhoeffer and other representatives of "Neo-Orthodoxy".

RELG 635 CHRISTOLOGY AND ECCLESIOLOGY. (3) Studies in the relation between two central theological loci, with special attention to their trinitarian, sacramental and eschatological frame of reference.

RELG 683 RESEARCH IN CHRISTIAN THEOLOGY. (3) Theologies of Religious Pluralism.

RELIGION AND CULTURAL AREA

RELG 571 RELIGION AND MEDICINE. (3) (Fall) A study of the resources of major world religions (Judaism, Christianity, Islam, Hinduism, Buddhism, Taoism and Shinto) for thinking about ethical issues related to modern medicine, e.g., health, illness, suffering; new reproductive technologies; genetic engineering; euthanasia; palliative care; animal research; transplants.

RELG 641 MODERN PHILOSOPHY OF RELIGION. (3)

RELG 642 PHILOSOPHY OF RELIGION IN THE 21ST CENTURY. (3) Intuition, Concept, Experience.

RELG 643 PROBLEMS: PHILOSOPHY OF RELIGION. (3) Faith and skepticism.

RELG 645 METHODS IN RELIGIOUS STUDIES. (3) (Note: Restricted to M.A. students in Religious Studies, except with permission of the instructor.) Students must e-mail Samieun Khan for permission to take the course at samieun.khan@mcgill.ca. Students should include their student IDs. Theoretical and methodological approaches to the study of religion, including: historical studies/textual hermeneutics; ritual/performance studies; and religion and modernity.

RELG 672 VALUE SYSTEMS - CHRISTIAN PERSPECTIVE. (3) A study of the dialogue between Christian theology and the sociology of religion.

RELG 684 RESEARCH IN PHILOSOPHY OF RELIGION 1. (3)

RELG 745 MEANING AND INTERPRETATION. (3) (Restriction: This course is available only to students in Ph.D. 2 or higher) An interdisciplinary seminar on hermeneutical problems.

ASIAN RELIGIONS AREA

ISLA 531D1 (3), ISLA 531D2 (3) SURVEY DEVELOPMENT OF ISLAMIC THOUGHT. (Fall) (3 hours) (Students must register for both ISLA 531D1 and ISLA 531D2.) (No credit will be given for this course unless both ISLA 531D1 and ISLA 531D2 are successfully completed in consecutive terms) A survey of the development of the major intellectual traditions of Islamic civilization in medieval and modern times.

RELG 546 INDIAN PHILOSOPHY. (3) (Fall) (Prerequisites: 6 credits in Indian religions, philosophy of religion, philosophy, or permission of the instructor) Introduction to the orthodox systems of Hindu philosophy leading up to Vedanta i.e., Nyaya, Vaisesika, Sankhya, Yoga and Mimamsa, which will include discussion of such topics as: grounds for belief and disbelief in God, the nature of revelation, means of knowledge, etc.

RELG 547 SPECIAL TOPICS IN HINDUISM. (3) (Prerequisites: 6 credits in Indian religions, philosophy of religion, philosophy, or permission of the instructor) A research-oriented seminar dealing with topics in Hindu studies.

RELG 548 INDIAN BUDDHIST PHILOSOPHY. (3) (Prerequisites: RELG 252 or RELG 342 or permission of instructor) The rise of buddhist schools of philosophy, especially the Theravada and Saumrntanika, as an attempt to systematize the canonical teachings and defend Buddhism against its critics.

RELG 549 JAPANESE BUDDHIST PHILOSOPHY. (3) (Prerequisites: RELG 344, or RELG 451, or permission of the instructor.) (Note: Taught in alternate years.) Major figures of the Kyoto School of Buddhist philosophy (Nishida, Tanabe, Nishitani), emphasizing their intellectual debts to both modern European philosophy (Hegel, Neitzsche, Heidegger) and Mahayana Buddhism (Zen and Pure Land Buddhism).

RELG 550 COMPARATIVE RELIGION. (3) (Fall and Winter and Summer) Tutorials and guided reading in the field of Comparative Religion.

RELG 552 ADVANTA VEDANTA. (3) (Fall) (Prerequisites: 6 credits in Indian religions) The relation of Nyaya-Vaisesika and Mimamsa to Kavaladvaita with concentration on Sankara's Brahmatsutrabhasopaha, Pada 1 and 2.

RELG 553 RELIGIONS OF SOUTH INDIA 1. (3) (Winter) (Prerequisite: 6 credits in Indian religions) Topics include: definitions of Tamil identity, the relation of akam to bhakti poetry, the theology of the Alvars and Nayanmars, inter-religious and sectarian competition, the motif of pilgrimage, questions of caste and women.

RELG 554 RELIGIONS OF SOUTH INDIA 2. (3) (Winter) (Prerequisite: RELG 553) Analysis of the following: sampradaya; ubhayavedanta; comparison of Visistadvaita and Saiva Siddhanta with reference to selected themes that illustrate the Tamil contribution; the relationship of theology to the sociology of knowledge in Tamilnad.

RELG 555 HONOURS SEMINAR. (3) (Winter) (Restriction: For Religious Studies Honours students or with permission of the Chair of the Religious Studies B.A. Committee) Current trends in the study of religion, including the approaches of critical theory, feminism, post-modernism, and post-colonialism.

RELG 556 ISSUES IN BUDDHIST STUDIES. (3) (Fall and Winter) (Prerequisite: permission of instructor) A graduate seminar taught by the Numata Visiting Professor on critical issues in contemporary Buddhist Studies. Emphasis will be placed on the intensive exploration of different methods - philological, philosophical or social scientific - to some area of modern Buddhist research.

RELG 557 ASIAN ETHICAL SYSTEMS. (3) (Fall) (Prerequisites: RELG 252, RELG 253, or permission of instructor) An examination of the ethical ideals that have evolved in Asia with reference to Hinduism, Buddhism, Confucianism, and Taoism. Issues to be explored include competing views of the individual's duties to social and political institutions, the individual's right to non-conformity, the relationship between morality and metaphysics, and a comparison of moral principles in theistic and atheistic contexts.

RELG 558 INDIAN TANTRIC TRADITIONS. (3) (Winter) (Prerequisites: Any two 300-level courses in Hinduism or Buddhism.) Study of esoteric Tantric culture (philosophy, ritual, pilgrimage, art, and iconography) with focus on either Hindu or Buddhist Tantric traditions.

RELG 571 RELIGION AND MEDICINE. (3) (Fall) A study of the resources of major world religions (Judaism, Christianity, Islam, Hinduism, Buddhism, Taoism and Shinto) for thinking about ethical issues related to modern medicine, e.g., health, illness, suffering; new reproductive technologies; genetic engineering; euthanasia; palliative care; animal research; transplants.

RELG 572 VALUE SYSTEMS - CHRISTIAN PERSPECTIVE. (3) A study of the dialogue between Christian theology and the sociology of religion.

RELG 651 INDIAN BUDDHIST EPISTEMOLOGY. (3) (Prerequisite: any two levels of Sanskrit or Pali, or permission of the instructor)

RELG 654 PRIMARY TEXT: JAPANESE. (3) (Prerequisite: Basic reading knowledge of Japanese or permission of instructor) Religious texts in Japanese, with particular attention to the problems of translation and interpretation as they apply to the student's thesis research.

RELG 657D1 (3), RELG 657D2 (3) INTRODUCTORY SANSKRIT. (Students must register for both RELG 657D1 and RELG 657D2) (No credit will be given for this course unless both RELG 657D1 and RELG 657D2 are successfully completed in consecutive terms)
RELG 658 Dogen: Philosophy and Practice. (3) (Prerequisite: RELG 451 or permission of the instructor.) Taught in alternate years. An introduction to the recent scholarship on the Japanese Zen monk Dogen focussing on both his philosophical writings and his attempt to create a life of monastic practice.

RELG 659 Primary Text: Pali. (3) (Prerequisite: Basic reading knowledge of Pali or permission of instructor) Introduction to the grammar of the Pali language and to the vocabulary found in the Pali canon and its commentaries.

RELG 665 Primary Text: Sanskrit 1. (3) (Prerequisite: Basic reading knowledge of Sanskrit or RELG 665 or permission of instructor) The Sanskrit alphabet, basic morphology and syntax of the classical language. Reading and analysis of passages from the Hindu epics and fable literature.

RELG 666 Primary Text: Sanskrit 2. (3) (Prerequisite: Basic reading knowledge of Sanskrit or RELG 665 or permission of instructor) Focus on development of greater speed and accuracy in reading poetry, mythology and philosophical texts, basic grammar, an introduction to the Sanskrit grammarians, analysis of word formation and compound formation, and to the conventions of commentators.

RELG 667 Readings in Indic Texts 1. (3) (Prerequisite: RELG 457D1/D2 or equivalent or permission of instructor.) Advanced course in critical reading of Sanskrit and/or other Indian texts.

RELG 668 Readings in Indic Texts 2. (3) (Prerequisite: RELG 457D1/D2 or equivalent or permission of instructor.) Continued critical reading of Sanskrit and/or other Indian texts.

RELG 669 Primary Text: Tibetan. (3) (Prerequisite: RELG 357 or permission of the instructor) Comparison of original Sanskrit texts with their Tibetan translations. For advanced students of Sanskrit who wish to learn to consult Tibetan translations of Buddhist texts originally written in Sanskrit.

Special Studies

RELG 680 Old Testament Research. (3)

RELG 681 Research in New Testament. (3)

RELG 682 Research: History of Christianity. (3)

RELG 683 Research in Christian Theology. (3) Theologies of Religious Pluralism.

RELG 684 Research in Philosophy of Religion 1. (3)

RELG 685 Research in Ethical Problems. (3)

RELG 687 Research in Comparative Religion 1. (3)

RELG 690 Old Testament Research. (6)

RELG 690D1 (3), RELG 690D2 (3) Old Testament Research. (Students must register for both RELG 690D1 and RELG 690D2) (No credit will be given for this course unless both RELG 690D1 and RELG 690D2 are successfully completed in consecutive terms)

RELG 692D1 (3), RELG 692D2 (3) Research: History of Christianity. (Students must register for both RELG 692D1 and RELG 692D2) (No credit will be given for this course unless both RELG 692D1 and RELG 692D2 are successfully completed in consecutive terms)

RELG 694 Research in Philosophy of Religion 2. (6)

RELG 696 Research: Religious Psychology. (6)

RELG 696D1 (3), RELG 696D2 (3) Research: Religious Psychology. (Students must register for both RELG 696D1 and RELG 696D2) (No credit will be given for this course unless both RELG 696D1 and RELG 696D2 are successfully completed in consecutive terms) (RELG 696D1 and RELG 696D2 together are equivalent to RELG 696)

RELG 751 Tutorial on a Selected Topic. (3)

RELG 751D1 (1.5), RELG 751D2 (1.5) Tutorial on a Selected Topic. (Students must register for both RELG 751D1 and RELG 751D2) (No credit will be given for this course unless both RELG 751D1 and RELG 751D2 are successfully completed in consecutive terms) (RELG 751D1 and RELG 751D2 together are equivalent to RELG 751)

RELG 752 Tutorial on a Selected Topic. (6)

RELG 752D1 (3), RELG 752D2 (3) Tutorial on a Selected Topic. (Students must register for both RELG 752D1 and RELG 752D2) (No credit will be given for this course unless both RELG 752D1 and RELG 752D2 are successfully completed in consecutive terms) (RELG 752D1 and RELG 752D2 together are equivalent to RELG 752)

M.A. (Non-Thesis)

RELG 660 M.A. Research Paper 1. (3)

RELG 661 M.A. Research Paper 2. (3)

RELG 662 M.A. Research Paper 3. (3)

M.A. (Thesis)

RELG 688 Thesis Research 1. (3)

RELG 689 Thesis Research 2. (3)

RELG 698 Thesis Research 3. (12)

RELG 698D1 (6), RELG 698D2 (6) Thesis Research 3. (Students must register for both RELG 698D1 and RELG 698D2) (No credit will be given for this course unless both RELG 698D1 and RELG 698D2 are successfully completed in consecutive terms) (RELG 698D1 and RELG 698D2 together are equivalent to RELG 698)

RELG 698N1 Thesis Research 3. (6) (Students must also register for RELG 698N2) (No credit will be given for this course unless both RELG 698N1 and RELG 698N2 are successfully completed in a twelve month period) (RELG 698N1 and RELG 698N2 together are equivalent to RELG 698)

RELG 698N2 Thesis Research 3. (6) (Prerequisite: RELG 698N1) (No credit will be given for this course unless both RELG 698N1 and RELG 698N2 are successfully completed in a twelve month period) (RELG 698N1 and RELG 698N2 together are equivalent to RELG 698) See RELG 698N1 for course description.

RELG 699 Thesis Research 4. (12)

RELG 699D1 (6), RELG 699D2 (6) Thesis Research 4. (Students must register for both RELG 699D1 and RELG 699D2) (No credit will be given for this course unless both RELG 699D1 and RELG 699D2 are successfully completed in consecutive terms) (RELG 699D1 and RELG 699D2 together are equivalent to RELG 699)

RELG 699N1 Thesis Research 4. (6) (Students must also register for RELG 699N2) (No credit will be given for this course unless both RELG 699N1 and RELG 699N2 are successfully completed in a twelve month period) (RELG 699N1 and RELG 699N2 together are equivalent to RELG 699)

RELG 699N2 Thesis Research 4. (6) (Prerequisite: RELG 699N1) (No credit will be given for this course unless both RELG 699N1 and RELG 699N2 are successfully completed in a twelve month period) (RELG 699N1 and RELG 699N2 together are equivalent to RELG 699) See RELG 699N2 for course description.

Comprehensive Examination

RELG 701 Comprehensive Examination. (0)

RELG 701D1 (0), RELG 701D2 (0) Comprehensive Examination. (Students must register for both RELG 701D1 and RELG 701D2) (No credit will be given for this course unless both RELG 701D1 and RELG 701D2 are successfully completed in consecutive terms) (RELG 701D1 and RELG 701D2 together are equivalent to RELG 701)
RELG 702 COMPREHENSIVE EXAMINATION. (0)
RELG 702D1 (0), RELG 702D2 (0) COMPREHENSIVE EXAMINATION.
(Students must register for both RELG 702D1 and RELG 702D2)
(No credit will be given for this course unless both RELG 702D1
and RELG 702D2 are successfully completed in consecutive
terms) (RELG 702D1 and RELG 702D2 together are equivalent to
RELG 702)

RELG 703 COMPREHENSIVE EXAMINATION. (0)
RELG 703D1 (0), RELG 703D2 (0) COMPREHENSIVE EXAMINATION.
(Students must register for both RELG 703D1 and RELG 703D2)
(No credit will be given for this course unless both RELG 702D1
and RELG 702D2 are successfully completed in consecutive
terms) (RELG 703D1 and RELG 703D2 together are equivalent to
RELG 703)

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74.1 Staff
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P.M. Austin; M.A.(C’nell), B.A., Ph.D.(Tor.)
L. Beraha; B.A., M.A., Ph.D.(McG)
L. Parts; M.A., Ph.D.(Col.) (on sabbatical 2009-2010)

74.2 Programs Offered
Master’s and Ph.D. in Russian
The Department offers graduate instruction (seminar and guided independent
reading courses) as well as research and thesis supervision in the fields of Russian
culture and literature. Current faculty specialize in 19th and 20th century literature.
Particular emphasis is placed on working with the original language; credits
may be allotted, at the discretion of the Department, to course work leading to advanced proficiency in this area.

Ph.D. Language Tests
Ph.D. candidates in other departments who require Russian for research and in satisfaction of the language requirement should contact the Department for recommended courses.

74.3 Admission Requirements
The general rules of Graduate and Postdoctoral Studies apply and are outlined in the General Information and Regulations section of the Calendar.

The minimum academic requirement is normally a high standing in an undergraduate degree with Honours Russian (or an equivalent specialization). Further, the Department must be convinced that the candidate for admission has an aptitude for research work and will be able to make an original contribution to knowledge.

A working knowledge of French is recommended for the Ph.D. program.

Any necessary preparation to fulfil these requirements will be offered within the Department or elsewhere at McGill. Certain graduate courses may be taken by arrangement at approved universities.

74.4 Application Procedures
Applications will be considered upon receipt of:
1. application form;
2. two certified copies of all university transcripts (all transcripts not in English or French must be accompanied by a certified translation in English or French);
3. two letters of recommendation (in English or French);
4. $100 application fee;
5. test results - GRE (recommended); TOEFL (required of all 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). Minimum score of 86, with each component score not less than 20; required on the internet-based TOEFL examination. Proof of TOEFL must be presented at time of application or shortly thereafter);
6. a sample of written work;
7. statement of academic intent;
8. interview, where appropriate, if necessary by telephone, with members of the Department Graduate Committee.

All information must be submitted to the Graduate Coordinator, Department of Russian and Slavic Studies.

Dates for Guaranteed Consideration
For dates for guaranteed consideration, please consult the following website: www.mcgill.ca/gradapplicants/programs. Then select the appropriate program.

McGill’s online application form for graduate program candidates is available at www.mcgill.ca/gradapplicants/apply.

74.5 Program Requirements
Original research work and the scholarly qualities of the thesis are the principal criteria for conferring a graduate degree in Russian.

M.A. in Russian (Thesis) (48 credits)
The Thesis Proposal is normally submitted for review by the Department Graduate Committee at the end of the second term of residency. Candidates should consult the Department Thesis Proposal Guidelines.

Complementary Courses (18 credits)
12 - 18 credits of graduate coursework in the Department
0 - 6 credits of graduate coursework outside the Department, subject to approval by the Department Graduate Committee
RUSS 600* (0) Tutorial in Russian
RUSS 601* (0) Tutorial in Russian
* if deemed necessary by the Department

Thesis Component – Required (30 credits)
RUSS 691 (6) M.A. Thesis Proposal
RUSS 692 (24) M.A. Thesis

Ph.D.
The Ph.D. requirements include:
RUSS 700, RUSS 701, and RUSS 702;
French Language Examination;

Depending on their individual background, students may be asked to take additional coursework as approved by the Department Graduate Committee. Students must complete two of the following guided research projects: RUSS 750, RUSS 760 or RUSS 770.

Ph.D. language requirements include proficiency in Russian, functional ability in English and in French, and proficiency in a second Slavic language, if relevant to the research topic and where deemed appropriate by the Department Graduate Committee.
74.6 Courses

Students preparing to register should consult Class Schedule on the web at www.mcgill.ca/student-records/register/class-schedule for the most up-to-date list of courses available; courses may have been added, rescheduled or cancelled after this Calendar was published. Class Schedule lists courses by term and includes days, times, locations, and names of instructors.

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

RUSS 500 SPECIAL TOPICS. (3) (Given in English) (Prerequisite: Permission of Department) Focus on a critical theme, author or work, as determined by the current research interests of faculty and visiting faculty.

RUSS 600 TUTORIAL IN RUSSIAN 1. (0) (Prerequisite: Permission of Department Graduate Committee.) Supervised independent study towards the achievement of professional competence in conducting research in Russian, including advanced language proficiency, bibliographic and electronic information retrieval.

RUSS 601 TUTORIAL IN RUSSIAN 2. (0) (Prerequisite: Permission of Department Graduate Committee.) Continued independent study towards achieving professional competence in conducting research in Russian, including advanced language proficiency, bibliographic and electronic information retrieval.

RUSS 691 M.A. THESIS PROPOSAL. (6) (Prerequisite: Permission of Department Graduate Committee.) Supervised preparation for the candidate's two designated Major Fields in the M.A. Comprehensive Examination.

RUSS 692 M.A. THESIS. (24) (Prerequisite: Permission of Department Graduate Committee.) Supervised independent study towards the achievement of professional competence in conducting research in Russian, including advanced language proficiency, bibliographic and electronic information retrieval.

RUSS 701 PH.D. COMPREHENSIVE EXAMINATION. (0) (Prerequisites: RUSS 700 and two of: RUSS 750, RUSS 760, RUSS 770.) Written and oral examination in two Major and two Minor fields of Russian literature and culture, as determined by the candidate and the Department's Graduate Committee.

RUSS 702 PH.D. THESIS PROPOSAL. (0) (Prerequisite: Permission of the Department Graduate Committee.) Ph.D. thesis proposal.

RUSS 750 HISTORY OF RUSSIAN LANGUAGE. (0) (Prerequisite: Permission of the Department Graduate Committee.) (Restriction: Not open to students who have taken RUSS 650D1/D2.) Exploration of the principal themes and critical issues in Russian historical grammar and the history of the Russian literary language from the 10th century to the present.

RUSS 760 PRE-PETRINE FOUNDATION. (0) (Prerequisite: Permission of the Department Graduate Committee.) (Restriction: Not open to students who have taken RUSS 660D1/D2.) Exploration of the principal themes and critical issues in Russian literature of the Pre-Petrine period. Comparison with similar problems in the candidate's major fields for the comprehensive examination.

RUSS 770 18TH CENTURY FOUNDATION. (0) (Prerequisite: Permission of the Department Graduate Committee.) (Restriction: Not open to students who have taken RUSS 670D1/D2.) Exploration of the principal themes and critical issues in Russian literature of the 18th century. Comparison with similar problems in the candidate's major fields for the comprehensive examination.

RUSS 790D1 (0), RUSS 790D2 (0) RUSSIAN LANGUAGE REQUIREMENT - PH.D. (Students must register for both RUSS 790D1 and RUSS 790D2) (No credit will be given for this course unless both RUSS 790D1 and RUSS 790D2 are successfully completed in consecutive terms).

75 Social Studies of Medicine

Department of Social Studies of Medicine
3647 Peel Street, 2nd Floor
Montreal, QC H3A 1X1
Canada
Telephone: 514-398-6033
Fax: 514-398-1498
Email: ssom@mcgill.ca
Website: www.mcgill.ca/ssom

Chair — Alberto Cambrosio

75.1 Staff

Emeritus Professor
Margaret Lock; B.Sc.(Leeds), M.A., Ph.D.(Calif., Berk.) (Marjorie Bronfman Professor of Social Studies in Medicine)

Professors
Alberto Cambrosio; M.Env.(Sher.), Ph.D.(Montr.)
Andrea Tone; M.A., Ph.D.(Emory) (Canada Research Chair in the Social History of Medicine)
George Weisz; M.A., Ph.D.(SUNY), Dr. 3rd Cycle(Paris) (Cotton-Hannah Professor of the History of Medicine)
Allan Young; M.A.(Wash.), B.A., Ph.D.(Penn.) (Marjorie Bronfman Professor in Social Studies of Medicine)

Associate Professors
Thomas Schlich; M.D.(Marburg), Ph.D.(Freiburg) (Canada Research Chair in History of Medicine)
Faith E. Wallis; M.A., M.L.S.(McG.), Ph.D.(Tor.)

Assistant Professor
Tobias Rees; M.A.(Tübingen), Ph.D.(Calif., Berk.)

Assistant Professors (Primary Appointment: Biomedical Ethics Unit)
Jonathan Kimmelman; M.A., Ph.D.(Yale)
Jennifer Fishman; M.A. (Calif., Irvine), Ph.D.(Calif.)
Nicholas King; M.A., Ph.D.(Harv.)

Adjunct Professor
Cornelius Borck

75.2 Programs Offered

The Department (SSOM) offers graduate studies in three programs:

• one in medical anthropology, given jointly with the Department of Anthropology;
• one in medical history, given jointly with the Department of History; and
• one in medical sociology, given jointly with the Department of Sociology.

In each program, the student may work towards the M.A. and Ph.D. degrees. All degrees are awarded by the relevant Faculty of Arts department. For further information regarding those departments, please consult the Anthropology, History, or Sociology sections.

The Department (SSOM) is interdisciplinary, having faculty in the fields of medical anthropology, medical history, and medical sociology. In its programs of graduate studies, it attempts to provide two things: a training that is solidly grounded in the discipline of the chosen program, i.e., in anthropology, history or sociology; and, through seminars and interaction with Department members and other graduate students, exposure to the other disciplines that are represented in the Department. The Department aims to instill in its graduates a combination of disciplinary competence and interdisciplinary perspective.
75.3 Admission Requirements

M.A. in Medical Anthropology
The program is open to students with backgrounds in the social sciences, the medical professions, or the medical sciences.

M.A. in the History of Medicine
Candidates must have a background in either history (Honours B.A. in History, or equivalent) or a degree in one of the health professions.

M.A. in Medical Sociology
The program is open to students with a background in social sciences, health professions or health sciences. It aims to prepare candidates for a career of teaching and research in medical sociology, and there is consequently a preference for applicants with the potential to proceed to the doctoral degree.

Ph.D. Programs
Candidates for a Ph.D. will normally have taken their M.A. in the same field. Please refer to the appropriate Department – Anthropology, History, or Sociology.

75.4 Application Procedures
McGill’s online application form for graduate program candidates is available at www.mcgill.ca/gradapplicants/apply.

M.A. in Medical Anthropology
Admission is granted by a joint admissions committee made up of representatives from Anthropology and SSOM. For details concerning applications, teaching assistantships, fellowships, etc., see section 4 “Anthropology”.

M.A. in the History of Medicine
Application is made directly to the History Department. For details see Department of History.

M.A. in Medical Sociology
Admission is granted by a joint admissions committee made up of representatives from Sociology and SSOM. For details concerning applications, teaching, assistantships, fellowships, etc., see Department of Sociology.

Ph.D. Programs
Please refer to the appropriate Department – Anthropology, History, or Sociology.

75.5 Program Requirements

M.A. IN MEDICAL ANTHROPOLOGY
For Anthropology courses, see Department of Anthropology. For SSOM seminars, see below.

M.A. in Medical Anthropology (Thesis) (48 credits)

Required Courses (42 credits)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>HSSM 605</td>
<td>Medical Anthropology</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 615</td>
<td>Seminar in Medical Anthropology</td>
<td>3</td>
</tr>
<tr>
<td>ANTH 694</td>
<td>M.A. Thesis Tutorial 1</td>
<td>6</td>
</tr>
<tr>
<td>ANTH 695</td>
<td>M.A. Thesis Tutorial 2</td>
<td>6</td>
</tr>
<tr>
<td>ANTH 699</td>
<td>M.A. Thesis</td>
<td>24</td>
</tr>
</tbody>
</table>

Complementary Courses (6 credits)

Two Anthropology courses.

M.A. IN THE HISTORY OF MEDICINE
The M.A. degree in Medical History does not have a thesis option.

The program requires the completion of 45 credits, composed of required courses, graduate seminars, plus a major research paper. The program is normally completed in three terms, or one calendar year (Fall, Winter and Summer).

M.A. in History of Medicine (Non-Thesis) (45 credits)

Required Courses (27 credits)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIST 684</td>
<td>Research Proposal</td>
<td>3</td>
</tr>
<tr>
<td>HIST 685</td>
<td>Directed Research</td>
<td>3</td>
</tr>
<tr>
<td>HIST 686</td>
<td>Bibliography Tutorial</td>
<td>6</td>
</tr>
<tr>
<td>HIST 687</td>
<td>MA Paper 1</td>
<td>9</td>
</tr>
<tr>
<td>HIST 688</td>
<td>MA Paper 2</td>
<td>6</td>
</tr>
</tbody>
</table>

Complementary Courses (18 credits)

18 credits at the 500 level or higher comprised of the following:

6 - 12 credits in History of Medicine courses below:

- HIST 619: Ancient Medicine Seminar 1
- HIST 620: Ancient Medicine Seminar 2
- HIST 636: Medieval Medicine Seminar 1
- HIST 637: Medieval Medicine Seminar 2
- HIST 640: Modern Medicine Seminar 1
- HIST 641: Modern Medicine Seminar 2
- HSSM 604: History of Medicine

6 - 12 credits in History (non-Medicine) courses

0 - 6 credits may be taken outside the department

Candidates for the M.A. degree follow an individual program approved by the Department.

M.A. IN MEDICAL SOCIOLOGY

Students may choose between two programs: M.A. thesis or non-thesis.

- For Sociology courses, see Department of Sociology. For SSOM seminars, see below.

M.A. in Medical Sociology (Thesis) (48 credits)

This includes 18 credits of course work and a research thesis that is based on original research (30 credits)

Required Courses (12 credits)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOCI 504</td>
<td>Quantitative Methods 1</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 540</td>
<td>Qualitative Research Methods</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 580</td>
<td>Social Research Design and Practice</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 652</td>
<td>Current Sociological Theory</td>
<td>3</td>
</tr>
</tbody>
</table>

Complementary Courses (6 credits)

one of the following two courses:

- SOCI 515: Medicine and Society
- SOCI 538: Selected Topics in Sociology of Biomedical Knowledge

plus one course in the History of Medicine.

Thesis Component – Required (30 credits)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOCI 690</td>
<td>M.A. Thesis 1</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 691</td>
<td>M.A. Thesis 2</td>
<td>6</td>
</tr>
<tr>
<td>SOCI 692</td>
<td>M.A. Thesis 3</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 693</td>
<td>M.A. Thesis 4</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 695</td>
<td>M.A. Thesis 6</td>
<td>15</td>
</tr>
</tbody>
</table>

M.A. in Medical Sociology (Non-Thesis) (45 credits)

This includes 27 credits of course work and a research paper based on original research (18 credits)

Required Courses (36 credits)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOCI 504*</td>
<td>Quantitative Methods 1</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 540*</td>
<td>Qualitative Research Methods</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 580*</td>
<td>Social Research Design and Practice</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 603</td>
<td>Bibliographic Methods 1</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 604</td>
<td>Bibliographic Methods 2</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 652*</td>
<td>Current Sociological Theory</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 696</td>
<td>Research Paper 1</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 697</td>
<td>Research Paper 2</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 699</td>
<td>Research Paper 4</td>
<td>12</td>
</tr>
</tbody>
</table>

* All students must have taken these courses or take them during the first year of the program. Students granted an exemption from any one or more of these courses by the Graduate Studies Committee must substitute another substantive seminar in its place.
76 Social Work

School of Social Work
Wilson Hall
3506 University Street, Suite 300
Montreal, QC H3A 2A7
Canada
Telephone: 514-398-7070
Fax: 514-398-4760
Email: graduate.socialwork@mcgill.ca
Website: www.mcgill.ca/socialwork
Director — Dr. Wendy Thomson

76.1 Staff

Emeritus Professor
David E. Woodsworth; B.A., Dipl.S.W.(Tor.), M.A.(Mich.), Ph.D.(Brandeis)

Professors
Linda Davies; B.S.W., M.S.W.(McG.), Ph.D.(N. Lond. Poly.)
Peter Leonard; B.Sc., M.Sc., Dipl. Mental Health(Lond.)
James Torczyner; B.H.L.(Yeshiva), M.S.W., D.S.W.(Calif.)
Nico Trocmé; B.A., M.S.W., Ph.D.(Tor.) (The Philip Fisher Chair in Social Work)
Wendy Thomson; B.S.W., M.S.W.(McG.), Ph.D.(Brist.)

Associate Professors
Shari Brotman; B.S.W., M.S.W.(McG.), Ph.D.(Tor.)
Myriam Denov; B.A.(Tor.), B.S.W.(McG.), M.A.(Ott.), Ph.D.(Camb.)
Sydney Duder; B.Sc., M.S.W., Dipl. Adv. Soc. Wk. Practice, Ph.D.(McG.)
Amanda Grenier; B.S.W.(Windsor); M.S.W., Ph.D.(McG.)
Estelle Hopmeyer; B.A., M.S.W.(McG.)
Julia Kranee; B.A.(Ott.), B.S.W.(McG.), M.S.W., Ph.D.(Tor.)
Lucyna Lach; B.A., M.S.W., Ph.D.(Tor.)

Assistant Professors
Delphine Collin-Vézina; B.Sc., Ph.D.(Montr.)
Jill Hanley; B.A., B.S.W.(McG.), M.A.(Tufts), Ph.D. (Montr.)
Nicole Ives; B.A.(Col.), M.S.W., Ph.D.(Penn.)
Tamara Sussman; B.A., B.S.W., M.S.W.(McG), Ph.D.(Tor.)

Coordinator of Field Education
Francine Granner; B.S.W., M.S.W.(McG.)

Associate Coordinator of Field Education
Karen Hetherington; B.A.(C'dia), M.A.(Montr.)

76.2 Programs Offered

Master of Social Work, a Joint program: Master of Social Work (M.S.W.) with integrated Bachelor of Civil Law (B.C.L.) / Bachelor of Laws (LL.B.), and a Ph.D. program offered jointly with Université de Montréal.

The McGill School of Social Work is a member of the International Association of Schools of Social Work, the Canadian Association of Schools of Social Work, and of the Rassemblement des Unités de Formation Universitaire en Travail Social du Québec.

The School of Social Work is a professional school with the primary objective of preparing students for careers and for leadership in the fields of social work and social welfare.

M.S.W. Program

The overarching objective of the master's program is the provision of advanced professional training by means of integrated learning experiences. Specifically, the educational goals are to:

1. Develop a deepened and advanced competence in practice and research;
2. Embrace a capacity for critical understanding of social theories, social problems and emergent issues;
3. Understand population groups in need, institutional structures, and policy initiatives and processes.

Ph.D. Program in Social Work

The School of Social Work offers a dynamic Ph.D. program in social work/social policy in order to promote the development of scholarship on social issues within Canada and Quebec. Courses are offered in English at McGill. A parallel stream is offered in French at Université de Montréal. Students have the option of taking courses at either university.

The program aims to:

1. Prepare graduates for careers in university teaching and research, policy development, implementation and evaluation, practice and program evaluation, leadership and management of human services;
2. Offer students the opportunity to acquire research methodology skills and to apply these to a range of areas relevant to social work;
3. Stimulate original research on important social problems and issues.

76.3 Admission Requirements

M.S.W. Program

Students who have successfully completed a B.S.W., with a minimum B average (GPA 3.0/4.0), and who have completed course work in statistics and in research methods at the undergraduate level are admissible to the Master of Social Work program. Normally, applicants will have professional experience in social service work, or related experience, subsequent to obtaining the B.S.W.

Students who have successfully completed all requirements in the first year of the 60-credit (two-year) B.S.W. program in the School of Social Work at McGill University are also eligible to
apply to the M.S.W. program. These students must have an over-
all B average (GPA 3.0/4.0), professional or related experience in
social service work prior to entering the two-year B.S.W. program
and have completed course work in statistics and in research
methods at the undergraduate level.

Joint program: Master of Social Work (M.S.W.) with integrated
Bachelor of Civil Law (B.C.L.) / Bachelor of Laws (LL.B.)
Students must apply separately for admission to each Faculty.
Students must meet or surpass the requirements for admission to
both the M.S.W. program and to Law and must submit a brief
statement explaining their interest in this joint program.

Ph.D. Program
Students apply directly to the School of Social Work. Applicants
applying to the Ph.D. program must hold a master's degree in
social work or, exceptionally, a bachelor's degree in social work
with a master's degree in a related subject from an accredited
program. However, applicants who hold a master's degree in a
related social science discipline with strong research interests
and experience in social work/social policy may also be consid-
ered.

Criteria considered in weighing applications include:
• Quality of the student's research project;
• Conviction/motivation demonstrated in the personal
statement;
• 'Fit' between the proposed research project and faculty
research interest.

A professor has to agree to act as thesis supervisor before the stu-
dent is formally admitted to the program.

76.4 Application Procedures

Dates for Guaranteed Consideration
For dates for guaranteed consideration, please consult the follow-
ing website: www.mcgill.ca/gradapplicants/programs. Then select
the appropriate program.

Applications will only be considered upon receipt of all required
documents.

Applicants to graduate studies whose mother tongue is not
English and who have not completed an undergraduate or gradu-
ate degree from a recognized foreign institution where English
is the language of instruction or from a recognized Canadian institu-
tion (anglophone or francophone), must submit documented proof
of competency in oral and written English. Before acceptance,
appropriate exam results must be submitted directly from the
TOEFL (Test of English as a Foreign Language) or IELTS (Inter-
national English Language Testing Systems) Office. An institu-
tional version of the TOEFL is not acceptable. Applications will
not be considered if a TOEFL or IELTS test result is not available.
• Test of English as a Foreign Language (TOEFL) – International
applicants must achieve a minimum score of 577 on the paper-
based test, 233 on the computer-based test, or 90* on the inter-
net-based test.
• Test of English as a Foreign Language (TOEFL) – International
applicants must achieve a minimum score of 21.
• International English Language Testing System (IELTS) –
International applicants must achieve a minimum overall band
score of 6.5.

All documents must be submitted to the School of Social Work,
attention: Ms. Lillian Iannone, Student Affairs Coordinator.

McGill's online application form for graduate program candi-
dates is available at www.mcgill.ca/gradapplicants/apply.

76.5 Program Requirements

MASTER OF SOCIAL WORK
The School of Social Work at McGill University prepares gradu-
ates for careers and leadership in the fields of social work and
social welfare. In the M.S.W. program, students develop an under-
standing of a broad range of theories which inform practice, policy
and research. Envisioned as an opportunity to advance knowledge
and skills, students are encouraged to immerse themselves in an
area of scholarship and practice related to "Children and Families",
"Social Care and Health Studies", and "Community and Interna-
tional Development". In addition, students investigate a subject
matter of their choice in one of these broad areas of study through
an independent study project or a master's thesis. Through the
M.S.W. program, students develop critical and innovative
approaches to practice competence and to policy analysis such
that they may contribute to both established social services and to
new and less developed areas of service provision.

The M.S.W. degree can be pursued via two options: thesis and
non-thesis. Both options carry a weight of 45 credits, and, taken
on a full-time basis, both options involve three terms of study. In
both options, part-time study can be arranged (see section on
"Duration and Time Limitations" below).

NOTE: While not a prerequisite for admission, possession of a
working knowledge of the French language is important not only to
candidates who intend to seek admission to the Quebec profes-
sional Ordre after graduation but also to those who wish to maxi-
mize their field placement opportunities during their program. In
consultation with the Field Education Coordinator, students may
have the option of completing their field requirements at an
approved social service agency outside of Quebec.

M.S.W. (Thesis) (45 credits)
This option is designed for students who have strong research
interests.

Required Courses (9 credits)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>SWRK 612</td>
<td>Knowledge, Values and Practice</td>
</tr>
<tr>
<td>SWRK 643</td>
<td>Research Methods 2</td>
</tr>
<tr>
<td>SWRK 653</td>
<td>Research Methods 1</td>
</tr>
</tbody>
</table>

Elective Courses (9 credits)

9 credits of SWRK 500- or 600-level courses; up to 6 credits in
total may be taken outside of the department.

Thesis Component – Required (27 credits)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>SWRK 698</td>
<td>(12) Thesis Research 1</td>
</tr>
<tr>
<td>SWRK 699</td>
<td>(15) Thesis Research 2</td>
</tr>
</tbody>
</table>

M.S.W. (Non-Thesis) (45 credits)
This option is designed for students who are interested in advanc-
ing practice skills in a specialized area.

Required Courses (21 credits)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>SWRK 612</td>
<td>Knowledge, Values and Practice</td>
</tr>
<tr>
<td>SWRK 643</td>
<td>Research Methods 2</td>
</tr>
<tr>
<td>SWRK 650</td>
<td>Field Work Practicum 1</td>
</tr>
<tr>
<td>SWRK 651</td>
<td>Field Work Practicum 2</td>
</tr>
<tr>
<td>SWRK 653</td>
<td>Research Methods 1</td>
</tr>
<tr>
<td>SWRK 660</td>
<td>Field Work Practicum 3</td>
</tr>
</tbody>
</table>

Elective Courses (15 credits)

15 credits of SWRK 500- or 600-level courses; up to 6 credits in
total may be taken outside of the department.

Project Component – Required (9 credits)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>SWRK 690</td>
<td>(9) Independent Study Project</td>
</tr>
</tbody>
</table>

Courses Taken Outside of the Department

Students in both M.S.W. options are invited to take up to two
courses in other departments of the University in areas of study
not offered in the School of Social Work. Students also have
the option of taking equivalent research methodology courses
offered in other departments to fulfill the research requirement.
All students must secure the approval of their advisor prior to reg-
istration for such courses.

Duration and Time Limitations

Taken on a full-time basis, both M.S.W. options involve three
terms of study. The third term may optionally be taken in the Sum-
mer, in which case the entire program may be completed in one
calendar year.
In both options, part-time study can be arranged. In the thesis option, a student may register for half-time studies, in which case the program may be completed in six terms. In the practice (non-thesis) option, students may arrange to register course by course, so that greater flexibility is possible. Students in both options who have met their residency requirement of three full-time terms (all 45 credits of study should have been registered for), but still have some incomplete work, must register for additional sessions and pay fees accordingly until all their program requirements have been completed.

Graduate and Postdoctoral Studies sets time limitations for students pursuing master’s programs at McGill. Full-time students must complete the M.S.W. degree within three years of initial registration, and part-time/half-time students must complete the degree within five years of initial registration. Under certain exceptional conditions, an extension may be permitted. These conditions are described in the General Information and Regulations section of the Graduate and Postdoctoral Studies Calendar.

**Joint Program: Master of Social Work (M.S.W.) with integrated Bachelor of Civil Law (B.C.L.) / Bachelor of Laws (LL.B.)**

A joint Master of Social Work (M.S.W.) with integrated Bachelor of Civil Law (B.C.L.) and Bachelor of Laws (LL.B.) program is offered by the School of Social Work and the Faculty of Law.

Students complete 45 credits for the M.S.W. degree and 87 credits for the integrated B.C.L. and LL.B. degrees for a total of 132 credits.

**Required – Social Work (33 credits)**

- SWRK 612 (3) Knowledge, Values and Practice
- SWRK 643 (3) Research Methods 2
- SWRK 650 (3) Field Work Practicum 1
- SWRK 651 (3) Field Work Practicum 2
- SWRK 653 (3) Research Methods 1
- SWRK 660 (6) Field Work Practicum 3
- SWRK 691 (12) Social Work / Law Independent Study Project

**Complementary – Social Work (12 credits)**

Students complete 12 credits of SWRK 500- or 600-level courses. A total of 6 graduate-level credits may be taken outside the School of Social Work with the approval of the academic advisor.

**Required – Law (48 credits)**

- LAWG 100D1 (3) Contractual Obligations
- LAWG 100D2 (3) Contractual Obligations
- LAW 101D1 (2.5) Extra-Contractual Obligations/Torts
- LAW 101D2 (2.5) Extra-Contractual Obligations/Torts
- PRAC 147D1 (1.5) Introductory Legal Research
- PRAC 147D2 (1.5) Introductory Legal Research
- PRAC 155D1 (1) Legal Writing, Mooting and Advanced Legal Research
- PRAC 155D2 (1) Legal Writing, Mooting and Advanced Legal Research
- PROC 124D1 (2) Judicial Institutions and Civil Procedure
- PROC 124D2 (2) Judicial Institutions and Civil Procedure
- PROC 200 (3) Advanced Civil Law Obligations
- PRV1 144D1 (2.5) Civil Law Property
- PRV1 144D2 (2.5) Civil Law Property
- PRV3 200 (3) Advanced Common Law Obligations
- PRV4 144D1 (2) Common Law Property
- PRV4 144D2 (2) Common Law Property
- PUB2 101D1 (3) Constitutional Law
- PUB2 101D2 (3) Constitutional Law
- PUB2 111 (3) Criminal Law
- PUB3 116D1 (2) Foundations
- PUB3 116D2 (2) Foundations

**Complementary – Law (39 credits)**

Students complete 39 credits of complementary courses toward the B.C.L. and LL.B. degrees.

**Complementary – Law, Civil Law (4.5 credits)**

Students complete 4.5 credits of civil law courses. The following courses count for their full credit weight as civil law.

- BUS 246 (3) Business
- LEEL 470 (3) Employment Law
- PROC 349 (3) Lease, Enterprise, Suretyship
- PRV1 225 (3) Successions
- PRV2 270 (3) Law of Persons
- PRV4 448 (3) Administration Property of Another and Trusts

**Complementary – Law, Common Law (4.5 credits)**

Students complete 4.5 credits of common law courses. The following courses count for their full credit weight as common law.

- PRV3 434 (3) Remedies
- PRV4 435 (3) Restitution
- PRV4 449 (3) Equity and Trusts
- PRV4 451 (3) Real Estate Transactions
- PRV4 456 (2) Wills and Estates
- PRV5 182 (2) Advanced Torts

**Complementary – Civil & Common Law**

The following trans-systemic courses count half their credit weight toward the civil law requirement of 4.5 credits and half their credit weight toward the common law requirement of 4.5 credits.

- BUS 365 (4) Business Associations
- CMPL 522 (3) Medical Liability
- LAWG 200 (4) Sale
- LAW 273 (3) Family Law
- LAW 300 (3) Family Property Law
- LAW 316 (3) Private International Law
- LAW 400 (4) Secured Transactions
- LAW 415 (3) Evidence (Civil Matters)
- PRV 483 (3) Consumer Law

**Complementary – Law, Social Diversity and Human Rights (3 credits)**

Students must take at least 3 credits from the following courses related to social diversity and human rights.

- CMPL 500 (3) Aboriginal Peoples and the Law
- CMPL 504 (3) Feminist Legal Theory
- CMPL 511 (3) Social Diversity and Law
- CMPL 516 (3) International Development Law
- CMPL 565 (3) International Humanitarian Law
- CMPL 571 (3) International Law of Human Rights
- CMPL 573 (2) Civil Liberties
- CMPL 575 (3) Discrimination and the Law
- LAWG 503 (3) Inter-American Human Rights
- LEEL 482 (3) Law and Poverty
- PUB 105 (3) Public International Law
- PUB 219 (3) Law and Psychiatry
- PUB 451 (3) Immigration and Refugee Law
- PUB 502 (3) International Criminal Law
- PUB 115 (3) Canadian Charter of Rights and Freedoms

**Complementary – Law, Other Courses (27 credits)**

Students select the remaining 27 credits from among Faculty of Law offerings.

**JOINT Ph.D. PROGRAM IN SOCIAL WORK**

**Ph.D. in Social Work**

(offer jointly by McGill and Université de Montréal)

**Required Courses (6 credits)**

- SWRK 720 (3) Thought and Theory Development in Social Work
- SWRK 721 (3) Advanced Integrative Seminar

**Complementary Courses (9 credits)**

3 credits, one of the following courses:

- SWRK 722 (3) Advanced Seminar: Social Work Intervention
- SWRK 723 (3) Advanced Seminar on Social Policy
SWRK 701 (0) Comprehensive Examination

Comprehensive – Required

SWRK 701 (0) Comprehensive Examination

Thesis

Duration of Program

McGill Graduate and Postdoctoral Studies regulations prescribe a minimum of two years’ “residence” – that is, registration on a full-time basis for two years, or paying the corresponding fees – after the master’s degree for a doctoral degree. The deadline for submission of the dissertation is five years from the completion of residence requirements. Students entering McGill with a master’s degree, as will be the case with all students in this program, have the student status of Ph.D. 2 in their first year.

76.6 Courses

Students preparing to register should consult Class Schedule on the web at www.mcgill.ca/student-records/register/class-schedule for the most up-to-date list of courses available; courses may have been added, rescheduled or cancelled after this Calendar was published. Class Schedule lists courses by term and includes days, times, locations, and names of instructors.

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

SWRK 531 SOCIAL PERSPECTIVES ON AGING 2. (3) (Summer) (Restriction: School of Social Work: Limited to U3 and M.S.W. students) Instructors and students from various disciplines will focus on certain aspects of aging related to issues of independence in later life. The provision of services and their impact on the recipients will be evaluated. Senior citizens will participate in the course as Senior Consultants.

SWRK 532 INTERNATIONAL SOCIAL WORK. (3) (Restriction: Limited to B.S.W. U3, 2-year B.S.W. and M.S.W. students) Discussion based upon intensive study and reports on problems in selected countries. Emphasis on identifying major social problems, understanding the social forces bearing on those problems and considering appropriate professional approaches to aid in their solution.

SWRK 539 CHRONIC AND TERMINAL ILLNESS. (3) (Winter) (Restriction: Limited to B.S.W. U3, 2-year B.S.W. and M.S.W. students) A seminar to examine practice with persons living with chronic and terminal illnesses. Needs of families, caretakers, health care workers and the gay community are studied.

SWRK 600 MOTHERING, FATHERING AND SOCIAL WORK PRACTICE. (3) This course explores the social and psychological construction of maternal subjectivity, maternal ambivalence and implications for clinical practice. It also explores the recent emphasis in social work on engaging fathers. Students are encouraged to reflect and draw on their experience as parents, children and social workers in their discussion and written work.

SWRK 601 CONSTRUCTION OF SUBJECTIVITY. (3) This course will present a critical approach to understanding how personality is constructed within the major social relations of class, gender and race. Relevance to students' research and practice interests will be explored.

SWRK 602 YOUTH JUSTICE IN CANADA. (3) (Note: Open to all graduate-level students including students outside of Social Work.) Youth delinquency and youth justice intervention from the theoretical and practical perspectives, including socio-legal responses to youth crime and strategies of intervention. Exploration of the ways in which gender, “race”, socio-economic status and other factors shape young people's contact and experiences with the criminal justice system.

SWRK 604 CRITICAL ISSUES: SOCIAL POLICY. (3) With the erosion of the contemporary welfare state, analysts have argued that state responsibility for social and economic well-being has been shifted to the private sphere, notably families. This course explores how social policies and practices contribute to this shift, and how gender, class and inequalities are thereby reinforced.

SWRK 606 PRACTICE IN CHILD WELFARE. (3) Reflection on current practices in child welfare. An overview of contemporary theoretical frameworks and students’ experiences in the field will form the basis of class discussion. Topics include: the construction of abuse and neglect; the risk ethos, families/mothers’ experiences of child welfare services; the reflective practitioner and resistance.

SWRK 609 UNDERSTANDING SOCIAL CARE. (3) Historical overview of social care to respond to contemporary issues in health and community services. Topics include: meaning of care; history of care in home and community; need, risk, dependence/independence; and organisation of care in Quebec and beyond.

SWRK 610 FAMILY TREATMENT. (3) (Prerequisite: SWRK 622) An advanced seminar on techniques and practice of current therapies.

SWRK 612 KNOWLEDGE, VALUES AND PRACTICE. (3) (Required course) Introduction of the current debate about the status of knowledge in the social sciences, especially issues of objectivity, cultural differences and their implications for social work practice.

SWRK 620 MIGRATION AND SOCIAL WORK. (3) Social Work: Informing practice through examination of how migration's social, economic, political, legal, cultural aspects shape lives of those migrating voluntarily or involuntarily to Canada. Historical context of immigration policies, acculturation frameworks, different models of service provision in resettlement. Intersecting oppressions of status, ethnicity, gender, class, age, sexual orientation and differential ability.

SWRK 621 SEMINAR ON TRAUMA AND RESILIENCE. (3) Examination of the concepts of trauma and resilience within a comparative and international context. Exploration of theory, research, and practice interventions concerning trauma and resilience, both nationally and globally. Analysis of the ways in which culture, ethnicity, gender, class, and age shape experiences of trauma and recovery.

SWRK 622 UNDERSTANDING AND ASSESSING FAMILIES. (3) (Prerequisite: SWRK 320 D1/D2) The changing family system and overview of recent advancements in family assessment. Family developmental and systemic applications, with attention to the heterogeneity and diversity of the post-modern family, integrating contextual, gender, cultural and relational perspectives through the evaluation process.

SWRK 623 COUPLE COUNSELLING. (3) Triadic perspective on couple counselling. Topics include: value issues; origins of intimate conflict; characteristics of troubled couples; presenting couple complaints; separation; treatment techniques: alliances, coalitions, hierarchies, third party positioning, neutrality, secrets, counsellor symmetry and power, resistance.

SWRK 624 COMMUNITY ORGANIZATION. (3) The aim of this course is to develop an understanding of the organizing process at the grassroots level. Emphasis is placed upon community power and conflict, the development of organizing strategies and the application of such strategies in groups and movements dedicated to social change.

SWRK 625 PLANNING THEORY/SERVICE DELIVERY. (3) Planning theory and practice as they relate to community organizing and social service delivery. It focuses on 3 themes: 1) theories of planning and their applicability to social work practice, 2) the planning process (steps and process), 3) an examination of major planning issues in service delivery.
SWRK 626 INTERNATIONAL AND COMMUNITY DEVELOPMENT. (3) Advanced analysis of international and community development as a field of practice, policy and research. Critical concepts include colonization, development and underdevelopment, international socio-economic inequalities, social justice and social change, planning for development, governance.

SWRK 627 SOCIAL WORK PRACTICE WITH GROUPS. (3) This seminar will explore topics related to social work practice with groups including concepts of race, culture, gender and sexual orientation; authority and empowerment, ethical issues in practice; work with hard to reach and involuntary populations; termination and evaluation. It will be concerned with both theoretical issues and intervention strategies.

SWRK 628 VIOLENCE AGAINST WOMEN. (3) Discussion of the psychological, social and political factors which create and maintain a society where male violence against the women they love occurs. A feminist theoretical perspective will be developed and analyzed. Treatment approaches will be considered focusing on intervention strategies to help both the battered and the batterers.

SWRK 631 LEADERSHIP AND ORGANIZATION. (3) Starting and maintaining an effective non-profit organization, including values and vision, governance, strategy, performance and accountability, professionals and volunteers, support services, managing change, and working across organizational boundaries, partnerships, contracts, networks, coalitions.

SWRK 633 PROGRAM EVALUATION. (3) The theoretical and practical problems involved in evaluating the impact of social work services and social welfare programs. Topics include goal definition, comparison of experimental and non-experimental designs, data sources, qualitative and quantitative approaches, and outcome measures.

SWRK 635 ADVANCED CLINICAL PRACTICE. (3) Advanced clinical seminar to develop detailed, assessment theories, skills that apply to direct work - primarily with children and young adults. Critical examination of child meta-psychology, attachment and British object relations theories in light of research and current Canadian realities. Students expected to provide current practice examples for analysis and discussion.

SWRK 636 TUTORIAL IN SOCIAL WORK. (3) An individual or small group tutorial in which students will work independently in conjunction with the instructor. The student will undertake a major project related to the area of specialization.

SWRK 642 TUTORIAL SOCIAL WELFARE. (3) This tutorial permits students to pursue studies in special areas not covered in other courses, or to study in greater depth subjects covered in earlier work. Emphasis is on the content, operation and analysis of social welfare programs.

SWRK 643 RESEARCH METHODS 2. (3) (Prerequisite: SWRK 653) (Restriction: Limited to M.S.W. students) Quantitative methods used in social work, including data collection and analysis, critical appraisal of existing research, and proposal writing. Descriptive and explanatory designs, covering quantitative methods used in experimental studies, surveys, and in analyzing administrative data.

SWRK 648 SPECIAL TOPICS IN SOCIAL WORK. (3) This course will be offered from time to time to deal with topics of current interest in social work, that are not covered in other courses. Specific content will differ from year to year.

SWRK 649 SPECIAL TOPICS IN SOCIAL WELFARE. (3) This course will be offered from time to time to deal with topics of current interest in social welfare, that are not covered in other courses. Specific content will differ from year to year.

SWRK 650 FIELD WORK PRACTICUM 1. (3) Supervised educational experience in social work practice integrating practice with theoretical knowledge characteristic of the specialized field. Individual and group instruction. Involves approximately 115 hours of work in a field setting.

SWRK 651 FIELD WORK PRACTICUM 2. (3) Supervised educational experience in social work practice integrating practice with theoretical knowledge characteristic of the specialized field. Individual and group instruction. Involves approximately 115 hours of work in a field setting.

SWRK 653 RESEARCH METHODS 1. (3) Qualitative methods used in social work, including data collection and analysis, critical appraisal of existing research, and proposal writing. Description and interpretation of social phenomena, the foundations of qualitative research and methods of qualitative inquiry.

SWRK 655 SEMINAR ON AGING. (3) (Specific content will vary from year to year to allow for in-depth exploration of current topics in aging.) Advanced graduate seminar which focuses on a critical examination of historical and contemporary theories and practice models in gerontological social work.

SWRK 657 SEMINAR ON MENTAL HEALTH. (3) Policies and practices of mental health, including historical trends in the conceptualization of mental illness/wellness, foundations of DSM-IV, Canadian mental health public policies and best-practice approaches for specific problems.

SWRK 660 FIELD WORK PRACTICUM 3. (6) (Involves approximately 220 hours of work in a field setting) Supervised educational experience in social work practice integrating practice with theoretical knowledge characteristic of the specialized field. Individual and group instruction. Involves approximately 115 hours of work in a field setting.

SWRK 663 SOCIAL WORK APPLIED TO ALCOHOLISM. (3) This course provides information needed for social work treatment of alcoholism. It concentrates on the following issues: 1) the development and definition of alcoholism; 2) theories of alcoholism; 3) assessment of the alcoholic; and 4) intervention.

SWRK 664 MULTICULTURAL CONTEXT PRACTICE. (3) This course will examine current theory in "multicultural" social work and explore alternative models of practice based on anti-racist/anti-oppression principles. Of special interest in this course are the issues of access and equity in human services. Students are encouraged to develop critical analyses and to develop projects based on practice issues.

SWRK 666 LIVING WITH ILLNESS, LOSS AND BEREAVEMENT. (3) This seminar addresses the psycho-social concerns of patients and family members living with illness and/or non-bereavement loss. An interdisciplinary theoretical perspective is combined with clinical practice interventions. Special attention will be given to the role of the social worker.

SWRK 669 DISABILITY AND REHABILITATION. (3) Conceptual, empirical and policy basis for community, rehabilitation and support programs that provide advocacy, education, case management, counselling and other types of support services to individuals with physical and developmental disabilities and their families across the lifespan.

SWRK 670 SEMINAR ON CAREGIVING. (3) Critical engagement with existing knowledge claims in the social work literature on caregiving and examination of the impact of policy and practice on the lives of caregivers. Special emphasis is placed upon advances in social work practice with older people and people with disabilities.

SWRK 690 INDEPENDENT STUDY PROJECT. (9) An independent study project on a topic of interest in a comprehensive and creative fashion. The project is completed by the student following initial guidance from her/his advisor. It systematically examines a theoretical, substantive or empirical matter, using appropriate methodology.

SWRK 690D1 (4.5), SWRK 690D2 (4.5) INDEPENDENT STUDY PROJECT. (Students must register for both SWRK 690D1 and SWRK 690D2) (No credit will be given for this course unless both SWRK 690D1 and SWRK 690D2 are successfully completed in consecutive terms) SWRK 690D1 and SWRK 690D2 together are equivalent to SWRK 690) An independent study project on a topic of interest in a comprehensive and creative fashion. The project is completed by the student following initial guidance from her/his advisor. It systematically examines a theoretical, substantive or empirical matter, using appropriate methodology.
SWRK 691 SOCIAL WORK / LAW INDEPENDENT STUDY PROJECT. (12) Students will produce an essay consisting of: 1) identifying a substantive area which integrates core legal and social work knowledge; 2) analyzing the legal and behavioral science information in each substantive area; 3) developing and applying relevant theoretical frameworks; 4) developing research questions to be examined by qualitative or quantitative methods; 5) integrating research findings.

SWRK 691D1 (6), SWRK 691D2 (6) SOCIAL WORK / LAW INDEPENDENT STUDY PROJECT. (Students must register for both SWRK 691D1 and SWRK 691D2) (No credit will be given for this course unless both SWRK 691D1 and SWRK 691D2 are successfully completed in consecutive terms) (SWRK 691D1 and SWRK 691D2 together are equivalent to SWRK 691) Students will produce an essay consisting of: 1) identifying a substantive area which integrates core legal and social work knowledge; 2) analyzing the legal and behavioural science information in each substantive area; 3) developing and applying relevant theoretical frameworks; 4) developing research questions to be examined by qualitative or quantitative methods; 5) integrating research findings.

SWRK 698 THESIS RESEARCH 1. (12) Independent research work under the direction of a supervisor.

SWRK 698D1 (6), SWRK 698D2 (6) THESIS RESEARCH 1. (Students must register for both SWRK 698D1 and SWRK 698D2) (No credit will be given for this course unless both SWRK 698D1 and SWRK 698D2 are successfully completed in consecutive terms) (SWRK 698D1 and SWRK 698D2 together are equivalent to SWRK 698) Independent research work under the direction of a supervisor.

SWRK 701 COMPREHENSIVE EXAMINATION. (0) (Restriction: Open only to students in the joint Social Work Ph.D. program)

SWRK 720 THOUGHT AND THEORY DEVELOPMENT IN SOCIAL WORK. (3) (Restriction: Open only to students in the joint Social Work Ph.D. program) The purpose of this seminar is to explore the origins and historical development of social work theory. Included in the analysis of this development will be the impact of material, cultural and ideological shifts within society in general and social welfare in particular. Attention will also be given to the effect of changes within relevant social science disciplines on the process of social work theory development and its relationship to intervention.

SWRK 721 ADVANCED INTEGRATIVE SEMINAR. (3) (Restriction: Open only to students in the joint Social Work Ph.D. program) Development of a research question, the relationship between research objectives and research methodologies, and situating a project with a theoretical and historical framework.

SWRK 723 ADVANCED SEMINAR ON SOCIAL POLICY. (3) (Restriction: Open only to students in the joint Social Work Ph.D. program) Analysis of social policies and their impact on social work practice and on the clientele they affect. Study of the interaction between social policies and styles of management of social work organizations responsible for their application.

SWRK 724 ADVANCED RESEARCH METHODS AND ANALYSIS: QUANTITATIVE DATA. (3) (Restriction: Open only to students in the joint Social Work Ph.D. program) Problems encountered in the use of quantitative methods in social work research. Types of quantitative research useful in social welfare policy analysis and discussion of yield from alternative analytic methods.

SWRK 725 ADVANCED QUALITATIVE RESEARCH METHODS AND DATA ANALYSIS. (3) (Restriction: Open only to students in the joint Social Work Ph.D. program) Review of the principal methods comprised under the area of qualitative research and problems related to the utilization of those methods. Particular attention to analysis arising from these methods.

SWRK 726 INDEPENDENT STUDY. (3) (Restriction: Open only to students in the joint Social Work Ph.D. program)
Associate Members
Gregory Baum (Religious Studies)
Jennifer Fishman (Social Studies of Medicine)

77.2 Programs Offered


Theses and dissertations are normally supervised in one of the following areas of Department research concentration: states and social movements; economy and society; social inequality (class, ethnicity and gender), deviance and social control and medical sociology.

Availability of Funding

Prospective students may apply for a variety of fellowships administered by the University, through research-granting agencies in Quebec, Canada, or in their home countries. Other sources of funding include private companies, agencies, foundations, other provincial and federal government agencies, as well as foreign governments and organizations. Detailed information on other funding sources is available on the McGill website, www.mcgill.ca/gps.

The Department offers a limited number of teaching assistantships of $4,219.20 per term. Teaching assistantships require 12 hours of work per week in both the Fall and Winter terms. Students who wish to be considered for such assistantships should inform the Graduate Admissions Director, Leacock 713, in writing and preference will be given to those dossiers completed by January 15th.

77.3 Admission Requirements

Applicants must have a bachelor's degree with a standing equivalent to a cumulative grade point average (CGPA) of 3.3 or better out of a possible 4.0. The degree may be either in Sociology – in which case it should be equivalent to the Honours B.A. degree at McGill – or it may be in another related social science. In the latter case, applicants may be required to take some additional Sociology courses to fill gaps in their background.

The strength of an applicant's academic record is of primary importance in consideration of an applicant's dossier. For a detailed description of courses open to graduates and undergraduates, and of preparation required of McGill University honour students, candidates should consult the Undergraduate Programs Calendar via the web at www.mcgill.ca/courses.

All applicants are asked to submit two letters of recommendation and two certified copies of their university-level grades along with an example of their written work. Applicants who have received a master's degree at a university other than McGill should submit a copy of their thesis or evidence of equivalent research experience with their application for admission. The applicant's dossier must be complete before the dates for guaranteed consideration to be considered for the McGill Awards Competition and the internal Teaching Assistantship competition.

Applicants not registered at Canadian universities must submit with their applications the results of the Verbal and Quantitative aptitude tests of the Graduate Record Examination. Canadian students are also encouraged to submit the results of this test with their application. Arrangements to take the Graduate Record Examination should be made directly with the Educational Testing Service by visiting their website at www.gre.org/ttindex.html. 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. The minimum acceptable score for the TOEFL exam is 580 on the paper-based test and 237 on the computer-based test. International students can also contact International Student Services at 514-398-4349 for more information, or visit their website, www.mcgill.ca/internationalstudents.

Candidates who lack sufficient preparation in the social sciences, but whose academic record justifies consideration for eventual admission to the master's graduate program, must register for a qualifying year during which they are required to take courses to broaden their knowledge of sociology. Candidates must achieve a final mark of at least a B in these courses and an average in all courses of at least B++; in general, they must, in the opinion of the Department, have achieved sufficient preparation in the subject matter of sociology before they will be allowed to proceed with graduate work. All candidates are expected to have taken courses in statistics, research methods and sociological theory at the undergraduate level.

Any prospective students are encouraged to contact faculty members that they may wish to work with to ascertain that they will be available and not on leave during the time at which they wish to study. If need be, they may feel free to contact the Chair of the Graduate Admissions Committee to guide them.

The program of study is designed to give students an advanced understanding of a major field in sociology, of current methods of sociological research, and of some principal theoretical issues in the discipline. Three terms of residence study is the minimum requirement for a master's degree.

M.A. in Medical Sociology

The program is open to students with a social sciences, health professions or health sciences background. It is interdisciplinary in nature and includes required courses offered by both participating departments as well as a research thesis based on original research. For additional information concerning this program, please consult the Social Studies of Medicine section or the website, www.mcgill.ca/ssom.

77.4 Application Procedures

Dates for Guaranteed Consideration

For dates for guaranteed consideration, please consult the following website: www.mcgill.ca/gradapplicants/programs. Then select the appropriate program.

Note: We are not willing to consider any applications to be admitted for the Summer term.

Please note that the dossier must be complete with ALL of the following information before the applicant will be considered for entrance to the graduate program:

1. application form;
2. Statistics, Theory, Methods form;
3. two certified copies of undergraduate and graduate-level transcripts. Please provide an official translation if the original is not in English or French;
4. two letters of reference on the departmental forms enclosed with the graduate application package;
5. test results (Graduate Record Examination (GRE) / Test of English as a Foreign Language (TOEFL) (if applicable) minimum score: 580 on the paper-based test, 237 on the computer-based test);
6. Statement of Academic Background - a brief statement of the applicant's interests and the areas of sociology he/she wishes to study at McGill;
7. one or two samples of written work. This can be in the form of a graded paper or a chapter from a thesis and must be at least 15 typewritten pages in length translated into English or French;
8. M.A. Option Form (for M.A. applicants only).
M.A. in Medical Sociology
Admission is granted by a joint admissions committee made up of representatives from Sociology and Social Studies of Medicine.

77.5 Program Requirements

M.A. PROGRAM OPTIONS

The M.A. degree has ten options:

- non-thesis option consisting of seven required courses plus a research paper;
- non-thesis option in Development Studies which requires seven courses plus a research paper;
- non-thesis option in Gender and Women's Studies consisting of seven required courses plus a gender and/or women's studies-based research paper;
- non-thesis option in Medical Sociology which requires seven courses plus a research paper;
- non-thesis option in Social Statistics which requires seven courses (supplemented by further statistical courses) plus a statistics-based research paper;
- thesis option with five required courses and a thesis;
- thesis option in Development Studies with five required courses and a thesis;
- thesis option in Environment (18 credits of required courses and 3 credits of complementary courses plus an environment-based thesis);
- thesis option in Gender and Women's Studies consisting of six required courses plus a gender and/or women's studies-based thesis;
- thesis option in Medical Sociology, which requires six courses plus a thesis;

Although the non-thesis option requires more course work, students taking this option are likely to obtain the M.A. more rapidly than those in the thesis option because of the difficulty and length of time involved in completing an M.A. thesis. The expectation is that most students will choose the non-thesis master's program so as to progress more quickly, especially those wishing to pursue a doctoral degree. The programs are described in more detail below.

M.A. in Sociology (Non-Thesis) (45 credits)

This program requires a research paper that will normally, but not necessarily, flow out of a paper written for one of the graduate seminars or an independent reading course. Comparable to an article in a professional journal, the paper ought to focus on a clearly defined research problem, demonstrating familiarity with the most important relevant scholarly work and the ability to carry out research and organize the results of the research. This paper is expected to be no more than 30 pages in length, exclusive of footnotes and bibliography.

Required Courses (36 credits)

SOC 504 (3) Quantitative Methods 1
SOC 540 (3) Qualitative Research Methods
SOC 580 (3) Social Research Design and Practice
SOC 603 (3) Bibliographic Methods 1
SOC 604 (3) Bibliographic Methods 2
SOC 652 (3) Current Sociological Theory
SOC 696 (3) Research Paper 1
SOC 697 (3) Research Paper 2
SOC 699 (12) Research Paper 4

Complementary Courses (9 credits)

9 credits of complementary courses at the 500 level or higher.

M.A. in Sociology (Non-Thesis) – Development Studies Option/Concentration (45 credits)

The research essay must be on a topic relating to development studies, approved by the Development Studies Option (DSO) coordinating committee.

Required Courses (39 credits)

INTD 657 (3) Development Studies Seminar
SOC 504 (3) Quantitative Methods 1
SOC 540 (3) Qualitative Research Methods
SOC 580 (3) Social Research Design and Practice
SOC 603 (3) Bibliographic Methods 1
SOC 604 (3) Bibliographic Methods 2
SOC 652 (3) Current Sociological Theory
SOC 696 (3) Research Paper 1
SOC 697 (3) Research Paper 2
SOC 699 (12) Research Paper 4

Complementary Courses (6 credits)

6 credits of complementary courses at the 500 level or higher related to international development studies from the list below:

SOC 504* (3) Quantitative Methods 1
SOC 540* (3) Qualitative Research Methods
SOC 580* (3) Social Research Design and Practice
SOC 603 (3) Bibliographic Methods 1
SOC 604 (3) Bibliographic Methods 2
SOC 652* (3) Current Sociological Theory
SOC 696 (3) Research Paper 1
SOC 697 (3) Research Paper 2
SOC 699 (12) Research Paper 4

M.A. in Sociology (Non-Thesis) – Gender and Women's Studies Option/Concentration (45 credits)

The Graduate Option in Gender and Women's Studies is an interdisciplinary program for students who meet the degree requirements in Sociology who wish to earn 6 credits of approved coursework focusing on gender and women's studies, and issues in feminist research and methods. The student's research paper must be on a topic centrally relating to issues of gender and/or women's studies.

Required Courses (39 credits)

SOC 504* (3) Quantitative Methods 1
SOC 540* (3) Qualitative Research Methods
SOC 580* (3) Social Research Design and Practice
SOC 603 (3) Bibliographic Methods 1
SOC 604 (3) Bibliographic Methods 2
SOC 652* (3) Current Sociological Theory
SOC 696 (3) Research Paper 1
SOC 697 (3) Research Paper 2
SOC 699 (12) Research Paper 4

* All students must have taken these courses or take them during the first year of the program. Students granted an exemption from any one or more of these courses by the Graduate Studies Committee must substitute another substantive seminar in its place.
Complementary Courses (6 credits)
6 credits at the 500 level or higher including:
WMST 602  (3)  Feminist Research Symposium
or one 3-credit course on gender/women’s studies issues at the
500 level or higher (may be taken in or outside the Department).
Candidates for the M.A. degree follow an individual program
approved by the Department.
M.A. in Sociology (Non-Thesis) – Medical Sociology
(45 credits)
This program is given jointly by the Sociology Department and the
Department of Social Studies in Medicine.
Required Courses (36 credits)
SOCI 504*  (3)  Quantitative Methods 1
SOCI 540*  (3)  Qualitative Research Methods
SOCI 580*  (3)  Social Research Design and Practice
SOCI 603  (3)  Bibliographic Methods 1
SOCI 604  (3)  Bibliographic Methods 2
SOCI 652*  (3)  Current Sociological Theory
SOCI 665  (3)  Research Paper 1
SOCI 670  (3)  Research Paper 2
SOCI 699  (12)  Research Paper 4
*  All students must have taken these courses or take them during
the first year of the program. Students granted an exemption from
any one or more of these courses by the Graduate Studies
Committee must substitute another substantive seminar in its place.
Complementary Courses (9 credits)
3 credits, one of the following courses:
SOCI 515  (3)  Medicine and Society
SOCI 538  (3)  Selected Topics in Sociology of Biomedical
Knowledge
3 credits, one graduate-level course in History of Medicine.
3 credits, one graduate-level course in Social Studies of
Medicine.
M.A. in Sociology (Non-Thesis) – Social Statistics
Option/Concentration (45 credits)
The program complements disciplinary training with research
experience applying statistical methods to Statistics Canada data
(or equivalent). It requires a statistics-based research paper that
will normally, but not necessarily, flow out of a paper written for one
experience applying statistical methods to Statistics Canada data
The program complements disciplinary training with research
Committee must substitute another substantive seminar in its place.
Complementary Courses (9 credits)
3 credits, one of the following courses:
SOCI 515  (3)  Medicine and Society
SOCI 538  (3)  Selected Topics in Sociology of Biomedical
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The program complements disciplinary training with research
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experience applying statistical methods to Statistics Canada data
The program complements disciplinary training with research
Committee must substitute another substantive seminar in its place.
Complementary Courses (9 credits)
3 credits, one of the following courses:
SOCI 515  (3)  Medicine and Society
SOCI 538  (3)  Selected Topics in Sociology of Biomedical
Knowledge
3 credits, one graduate-level course in History of Medicine.
3 credits, one graduate-level course in Social Studies of
Medicine.
M.A. in Sociology (Non-Thesis) – Social Statistics
Option/Concentration (45 credits)
The program complements disciplinary training with research
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The program complements disciplinary training with research
Committee must substitute another substantive seminar in its place.
Complementary Courses (9 credits)
3 credits, one of the following courses:
SOCI 515  (3)  Medicine and Society
SOCI 538  (3)  Selected Topics in Sociology of Biomedical
Knowledge
3 credits, one graduate-level course in History of Medicine.
3 credits, one graduate-level course in Social Studies of
Medicine.
**M.A. in Sociology (Thesis) – Environment**

**Option/Concentration (48 credits)**

**Required Courses** (18 credits)
- ENVR 610 (3) Foundations of Environmental Policy
- ENVR 650 (1) Environmental Seminar 1
- ENVR 651 (1) Environmental Seminar 2
- ENVR 652 (1) Environmental Seminar 3
- SOCI 504 (3) Quantitative Methods 1
- SOCI 540 (3) Qualitative Research Methods
- SOCI 580 (3) Social Research Design and Practice
- SOCI 652 (3) Current Sociological Theory

**Complementary Courses** (3 credits)
3 credits from:
  - ENVR 519 (3) Global Environmental Politics
  - ENVR 544 (3) Environmental Measurement and Modelling
  - ENVR 580 (3) Topics in Environment 3
  - ENVR 611 (3) The Economy of Nature
  - ENVR 620 (3) Environment and Health of Species
  - ENVR 622 (3) Sustainable Landscapes
  - ENVR 630 (3) Civilization and Environment 1
  - ENVR 680 (3) Topics in Environment 4

or another course at the 500 level or higher recommended by the advisory committee and approved by the Environment Option Committee.

**Thesis Component – Required** (27 credits)
An environmental component is required in the thesis.
- SOCI 690 (3) M.A. Thesis 1
- SOCI 692 (3) M.A. Thesis 3
- SOCI 693 (3) M.A. Thesis 4
- SOCI 694 (18) M.A. Thesis 5

**M.A. in Sociology (Thesis) – Gender and Women’s Studies**

**Option/Concentration (48 credits)**

The Graduate Option in Gender and Women’s Studies is an interdisciplinary program for students who meet the degree requirements in Sociology who wish to earn 6 credits of approved coursework focusing on gender and women’s studies, and issues in feminist research and methods. The student’s M.A. thesis must be on a topic centrally relating to issues of gender and/or women’s studies.

**Required Courses** (15 credits)
- SOCI 504 (3) Quantitative Methods 1
- SOCI 540 (3) Qualitative Research Methods
- SOCI 580 (3) Social Research Design and Practice
- WMST 601 (3) Feminist Theories and Methods

All students must have taken these courses or take them during the first year of the program. Students granted an exemption from any one or more of these courses by the Graduate Studies Committee must substitute another substantive seminar in its place.

**Complementary Course** (3 credits)
3 credits at the 500 level or higher including:
- WMST 602 (3) Feminist Research Symposium

or one 3-credit course on gender/women’s studies issues at the 500 level or higher (may be taken in or outside the Department).

Candidates for the M.A. degree follow an individual program approved by the Department.

**Thesis Component – Required** (30 credits)
Preparation and completion of a thesis on a topic approved by the supervisor and by participating faculty members in the Gender and Women’s Studies program.
- SOCI 691 (6) M.A. Thesis 2
- SOCI 692 (3) M.A. Thesis 3
- SOCI 693 (3) M.A. Thesis 4
- SOCI 694 (18) M.A. Thesis 5

**M.A. in Sociology (Thesis) – Medical Sociology**

This program is given jointly by the Sociology Department and the Department of Social Studies in Medicine.

**Required Courses** (12 credits)
- SOCI 504* (3) Quantitative Methods 1
- SOCI 540* (3) Qualitative Research Methods
- SOCI 580* (3) Social Research Design and Practice
- SOCI 652* (3) Current Sociological Theory

* All students must have taken these courses or take them during the first year of the program. Students granted an exemption from any one or more of these courses by the Graduate Studies Committee must substitute another substantive seminar in its place.

**Complementary Courses** (6 credits)
3 credits, one of the following courses:
- SOCI 515 (3) Medicine and Society
- SOCI 538 (3) Selected Topics in Sociology of Biomedical Knowledge

3 credits, one graduate-level course in History of Medicine.

**Thesis Component – Required** (30 credits)
- SOCI 690 (3) M.A. Thesis 1
- SOCI 691 (6) M.A. Thesis 2
- SOCI 692 (3) M.A. Thesis 3
- SOCI 693 (3) M.A. Thesis 4
- SOCI 695 (15) M.A. Thesis 6

**M.A. in Sociology (Thesis) – Neotropical Environment**

**Option/Concentration (48 credits)**

(not offered in 2009-10)

McGill University and the Smithsonian Tropical Research Institute (STRI) have joined forces to offer graduate studies in neotropical environment. These are offered as options within existing programs in Biology, Bioresource Engineering, Geography, Political Science, Plant Science, Renewable Resources, and Sociology. Students must meet the Graduate and Postdoctoral Studies admission requirements, enter through one of the participating departments and meet the requirements of that unit. Advisors will be McGill professors and STRI scientists. The degree is granted by McGill University.

To provide students with some research experience, all candidates in this program must present a thesis based on their own research with the thesis fieldwork conducted in Latin America on a topic approved by the Neotropical Environment Option coordinating committee.

While not necessarily requiring an exhaustive review of work in the particular field of study, or a great deal of original scholarship, the thesis must show familiarity with previous work in the field and must normally demonstrate the ability to carry out research and to organize results, all of which must be presented in good literary style. The thesis will consist of between 50-75 pages of text, exclusive of footnotes and bibliography, which must be completed no later than August 31st of the second year in the program.

**Required Courses** (18 credits)
- BIOL 640 (3) Tropical Biology and Conservation
- ENVR 610 (3) Foundations of Environmental Policy
- SOCI 504* (3) Quantitative Methods 1
- SOCI 540* (3) Qualitative Research Methods
- SOCI 580* (3) Social Research Design and Practice
- SOCI 652* (3) Current Sociological Theory

* All students must have taken these courses or take them during the first year of the program. Students granted an exemption from any one or more of these courses by the Graduate Studies Committee must substitute another substantive seminar in its place.

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Further details on the requirements and regulations for the thesis

Required Courses

Ph.D. in Sociology – Environment Option/Concentration

A minimum of three years of study is required.

Required Courses (3 credits)

AGRI 550 (3) Sustained Tropical Agriculture
BIOL 553 (3) Neotropical Environments
BIOL 641 (3) Issues in Tropical Biology
ENVR 611 (3) The Economy of Nature
ENVR 612 (3) Tropical Environmental Issues
ENVR 680 (3) Topics in Environment 4
POLI 644 (3) Tropical Environmental Politics
SOCI 565 (3) Social Change in Panama

Thesis Component – Required (27 credits)

SOCI 690 (3) M.A. Thesis 1
SOCI 691 (6) M.A. Thesis 2
SOCI 692 (3) M.A. Thesis 3
SOCI 695 (15) M.A. Thesis 5

Ph.D. in Sociology

A minimum of three years of study is required.

Required Courses (3 credits)

SOCI 505 (3) Quantitative Methods 2
SOCI 703 (0) Bibliographic Methods 3
SOCI 704 (0) Bibliographic Methods 4

Complementary Courses (15 - 27 credits)

Five substantive courses at the 500 level or higher offered by the Department subject to the approval of the Graduate Committee.

Students who have not taken the courses listed below must make up the deficiencies in addition to the regular coursework:

(12 credits)

SOCI 504 (3) Quantitative Methods 1
SOCI 540 (3) Qualitative Research Methods
SOCI 580 (3) Social Research Design and Practice
SOCI 652 (3) Current Sociological Theory

If exemption is obtained for one or more seminars, another one must then be substituted in its place.

Comprehensives

SOCI 700* (0) Ph.D. Area Examination 1
SOCI 701* (0) Ph.D. Area Examination 2
SOCI 702* (0) Ph.D. Proposal Approval

* Ph.D. Candidates must take examinations in two subfields of sociology. These fields will be chosen from the Department's areas of specialization.

Examinations must be completed and the student's candidacy for the degree established no later than the end of the third year of graduate study.

Language Requirement

Ph.D. Candidates must demonstrate ability to read French with high proficiency or to read another language relevant to their field of research. The language requirement should be met by the end of the third year and may be satisfied by taking an approved French language course at the English and French Language Centre at McGill, or by a written examination in the Department or by exemption.

Complementary Courses (9 credits)

3 credits, one of the following courses:

ENVR 519 (3) Global Environmental Politics
ENVR 644 (3) Environmental Measurement and Modelling
ENVR 580 (3) Topics in Environment 3
ENVR 611 (3) The Economy of Nature
ENVR 620 (3) Environment and Health of Species
ENVR 622 (3) Sustainable Landscapes
ENVR 630 (3) Civilization and Environment 1
ENVR 680 (3) Topics in Environment 4

or other course at the 500 level or higher recommended by the advisory committee and approved by the Environment Option Committee.

6 credits at the 500 level or higher chosen from among the elective courses listed in the Sociology Department course offerings.

Students who have not taken the following courses must make up the deficiencies in addition to the regular coursework:

SOCI 504 (3) Quantitative Methods 1
SOCI 540 (3) Qualitative Research Methods
SOCI 580 (3) Social Research Design and Practice
SOCI 652 (3) Current Sociological Theory

If exemption is obtained for one or more seminars, another one must then be substituted in its place.

Language Requirement

Ph.D. Candidates must demonstrate ability to read French with high proficiency or to read another language relevant to their field of research. The language requirement should be met by the end of the third year and may be satisfied by taking an approved French language course at the English and French Language Centre at McGill, or by a written examination in the Department or by exemption.

Thesis – Required

An environmental component is required in the thesis.

Ph.D. in Sociology – Gender and Women’s Studies Option/Concentration

The Graduate Option in Gender and Women's Studies is an interdisciplinary program for students who meet the degree requirements in Sociology who wish to earn 9 credits of approved coursework focusing on gender and women's studies, and issues in feminist research and methods. The student's doctoral thesis must be on a topic centrally relating to issues of gender and/or women's studies.

Required Courses (9 credits)

SOCI 505 (3) Quantitative Methods 2
SOCI 703 (0) Bibliographic Methods 3
SOCI 704 (0) Bibliographic Methods 4
WMST 601 (3) Feminist Theories and Methods
WMST 602 (3) Feminist Research Symposium

Complementary Courses (15 - 27 credits)

15 credits of complementary courses at the 500 level or higher.
Four of these five courses must be taken within the Department, one of the five must be on gender/women’s issues.

Students who have not taken the courses listed below must make up the deficiencies in addition to the regular coursework:

(12 credits)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOCI 504</td>
<td>3</td>
<td>Quantitative Methods 1</td>
</tr>
<tr>
<td>SOCI 540</td>
<td>3</td>
<td>Qualitative Research Methods</td>
</tr>
<tr>
<td>SOCI 580</td>
<td>3</td>
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<td>3</td>
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</tbody>
</table>

If exemption is obtained for one or more seminars, another one must then be substituted in its place.

**Comprehensive**

<table>
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<th>Credits</th>
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<tbody>
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<td>Ph.D. Area Examination 1</td>
</tr>
<tr>
<td>SOCI 701*</td>
<td>0</td>
<td>Ph.D. Area Examination 2</td>
</tr>
<tr>
<td>SOCI 702*</td>
<td>0</td>
<td>Ph.D. Proposal Approval</td>
</tr>
</tbody>
</table>

*(Proposal subject to department approval and to approval by participating faculty members in Gender and Women's Studies program)*

Candidates must take examinations in two subfields of sociology. These fields will be chosen from the Department's areas of specialization.

Examinations must be completed and the student’s candidacy for the degree established no later than the end of the third year of graduate study.

**Thesis**

The doctoral thesis must be on a topic centrally relating to gender and/or women’s studies and approved by the Department and participating faculty members in the Gender and Women’s Studies program.

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**7.7.6 Courses**

Students preparing to register should consult Class Schedule on the web at [www.mcgill.ca/student-records/register/class-schedule](http://www.mcgill.ca/student-records/register/class-schedule) for the most up-to-date list of courses available; courses may have been added, rescheduled or cancelled after this Calendar was published. Class Schedule lists courses by term and includes days, times, locations, and names of instructors.

**Note:** All undergraduate courses administered by the Faculty of Arts (courses at the 100 to 500 level) have limited enrolment. All 500-level Sociology courses listed under the Faculty of Arts in the Undergraduate Programs Calendar (available at [www.mcgill.ca/courses](http://www.mcgill.ca/courses)) are open to graduate students and can be taken for graduate credit.

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

**SOCI 504 QUANTITATIVE METHODS 1.** (3) (Prerequisites: SOCI 350 and SOCI 461 or equivalents) Analysis of quantitative information, especially in large, survey-type, data sets. Use of computer programs such as SPSS and SAS. Topics include: cross tabulations with an emphasis on multi-dimensional tables, multiple correlation and regression, and, the relationship between individual and aggregate-level statistical analyses. Special reference to demographic techniques.

**SOCI 505 QUANTITATIVE METHODS 2.** (3) (Prerequisite: SOCI 504) Topics include: problems - and solutions - in regression analysis, models for categorical dependent variables, including logit, log-linear, and linear probability models, measurement models, structural equation models with latent variables (LISREL), and time series and panel analysis.

**SOCI 506 QUANTITATIVE METHODS 3.** (3) (Prerequisite: SOCI 504 or equivalent or permission of instructor.) Advanced statistical analyses focusing on advanced methods such as event history analysis and analysis of contingency tables.

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**SOCI 507 SOCIAL CHANGE.** (3) (Restrictions: Not open to students who have taken SOCI 672. Undergraduates by permission of instructor only.) An examination of the major sociological theories of long term macro social change. Topics include why industrialization began in Europe instead of Asia, the divergence among societies in systems of class, gender, ethnic and racial inequality, and whether industrial society has entered a new post-industrial or post-modern phase.

**SOCI 508 MEDICAL SOCIOLOGY AND SOCIAL PSYCHIATRY.** (3) (Pre-requisite: SOCI 309 or SOCI 310 or Permission of the Instructor.) (Note: Open to Social Studies of Medicine students.) The social construction of mental illness and disease, the personal and professional definition and recognition of illness, the distribution and determinants of illness, disease, sickness in the population, and the politics of medical research.

**SOCI 510 SEMINAR IN SOCIAL STRATIFICATION.** (3) (Prerequisites: SOCI 333 and SOCI 350 or equivalents) Recent theoretical and empirical developments in social stratification and inequality. The study of social class, with attention to the anomalous findings on heterogeneity in labour markets and the labour process, status attainment processes, and the socio-political and industrial attitudes of the working class. Students will prepare quantitative analysis of Canadian survey material as well as critical qualitative reviews.

**SOCI 511 MOVEMENTS/COLLECTIVE ACTION.** (3) A critical examination of classical and more recent approaches to the study of social movements and collective action. Discussion of: the role of grievances and interests, incentives and beliefs, conditions of breakdown and solidarity, mobilization and social control, the dynamics of collective action.

**SOCI 512 ETHNICITY & PUBLIC POLICY.** (3) (Prerequisite: SOCI 230 or permission from the instructor.) (Restriction: Not open to students who have taken SOCI 629.) Major themes in the theoretical literature on ethnicity. Public policies with direct and indirect implications for inter-ethnic relations will be studied. Policies affecting areas such as language, education, immigration, employment and promotion, multiculturalism and welfare. Examples drawn from several multi-ethnic societies. Political, constitutional, and economic problems associated with these policy initiatives.

**SOCI 513 SOCIAL ASPECTS HIV/AIDS IN AFRICA.** (3) (Prerequisites: SOCI 225 or SOCI 309 or Permission of Instructor.) Examination of the social causes and consequences of HIV/AIDS in Africa. Gender inequality, sexual behaviours, marriage systems, migration, and poverty are shaping the pandemic as well as how the pandemic is altering social, demographic and economic conditions across Africa.

**SOCI 514 CRIMINOLOGY.** (3) (Prerequisite: Permission of Instructor.) (Note: Grad students and U3 students only.) A survey of the major schools of thought that have developed to explain criminal behaviour from the emergence of modern criminology in the 18th and 19th centuries to current debates.

**SOCI 515 MEDICINE AND SOCIETY.** (3) (Prerequisite: Undergraduate students require permission of instructor) The sociology of health and illness. Reading in areas of interest, such as: the sociology of illness, health services occupations, organizational settings of health care, the politics of change in national health service systems, and contemporary ethical issues in medical care and research.

**SOCI 516 SOCIOLOGICAL THEORY & RESEARCH.** (3) (Prerequisites: SOCI 330 or Permission of Instructor.) (Note: Topics will vary from year to year.) Selected topics of current faculty interest in sociological theory and research.

**SOCI 519 GENDER AND GLOBALIZATION.** (3) (Prerequisite: SOCI 270 or permission of instructor.) Focus on the diverse forces of globalization that impact the lives of men and women. Critical analysis of key theories and concepts implicated in the intersection of globalization processes with gender dynamics.
SOCI 520 MIGRATION AND IMMIGRANT GROUPS. (3) (Prerequisite: 15 credits in the Social Sciences) Review of the major demographic, economic and sociological theories of internal and international migration. The main emphasis will be on empirical research on migration and immigrant groups.

SOCI 525 HEALTH CARE SYSTEMS IN COMPARATIVE PERSPECTIVE. (3) (Prerequisite: Permission of instructor.) (Restriction: Not open to students who are taking or have taken EPIB 525.) (Note: This course is cross-listed in Epidemiology, Biostatistics and Occupational Health and in Sociology.) Comparative perspective to illustrate processes involved in the development and evolution of health care systems around the world. Countries examined will represent different welfare state regimes, health care system typologies, levels of development and wealth.

SOCI 529 POLITICAL SOCIOLOGY 1. (3) (Prerequisite: SICI 330) Key theories and empirical areas of political sociology. Major works relevant to each theme will be read and analyzed. Topics include: political socialization, the social psychology of political behavior, class and politics, political organizations, elite studies. A research paper in one of the areas covered will be required.

SOCI 530 SEX AND GENDER. (3) (Restriction: Open to Honours Sociology students and to Sociology Majors with the permission of the instructor) This seminar critically reviews theoretical perspectives and research on sex and gender in various domains of social life. It gives special emphasis to work which considers the meaning of gender and how it differs across time and place.

SOCI 535 SOCIOLOGY OF THE FAMILY. (3) (Undergraduate students require permission of instructor) This seminar reviews literature on major research areas in family. The course examines families in the past, the study of family using a life course approach, and considers selective areas which may have had significant influences on contemporary family such as work and family, family violence, and cultural variation in families.

SOCI 538 SELECTED TOPICS IN SOCIOLOGY OF BIOMEDICAL KNOWLEDGE. (3) The seminar will examine recent work in the sociology of biomedical knowledge. It will focus on the technological shaping of biomedical knowledge, i.e., on the impact of new technologies and equipments on the development of biomedical knowledge.

SOCI 540 Qualitative Research Methods. (3) (Restrictions: open to Sociology Honours students, and Sociology Major Concentration students with the instructor's permission) Qualitative methodology, mainly participant observation, structured and unstructured interviewing. Students begin a research project using these techniques and submit field notes once a week.

SOCI 545 SOCIOLOGY OF POPULATION. (3) (Prerequisites: SOCI 234 or equivalent.) The classic literature of sociology of population. Drawing reciprocal linkages between social and population processes: Historical, family and labour force demography, demographic and fertility transitions, mortality, ethnic and race relations, gender, macro-structural interaction theory, and the relation of population and the environment.

SOCI 550 DEVELOPING SOCIETIES. (3) (Restriction: Undergraduate students require permission of instructor) The analysis of patterns of state and nation-building in historical and comparative perspectives with particular attention being given to methodology.

SOCI 555 COMPARATIVE HISTORICAL SOCIOLOGY. (3) (Restriction: Undergraduate students require permission of instructor) The analysis of patterns of state and nation-building in historical and comparative perspectives with particular attention being given to methodology.

SOCI 565 SOCIAL CHANGE IN PANAMA. (3) (Prerequisites: SOCI 210 and SOCI 350 or equivalents.) (Restriction: Students must register for a full term in the Panama Field Studies Semester.) (Note: Four field trips.) Analysis of social change in Panama, particularly during the 20th century: demography, social and economic structures, rural and urban activities and landscapes, indigenous peoples, the effects of the Canal and the Free Trade Zone. Focus throughout on the interaction of human society and the environment.

SOCI 571 DEVIANCE AND SOCIAL CONTROL. (3) This seminar focuses on how social groups enforce rules (and maintain social order) through coercion and socialization. It reviews current research and critiques key theoretical approaches to social control. Included are discussions of regulating institutions such as prisons and mental asylums, and the roles of gossip, manners and etiquettes.

SOCI 580 SOCIAL RESEARCH DESIGN AND PRACTICE. (3) (Restriction: Open to U3 and graduate students) Asking researchable sociological questions and evaluation of different research designs used to answer such questions. Development of cogent research proposals, including data collection procedures. Principles, dynamics, strengths and practical limitations of research designs. Examples from recent publications.

SOCI 588 SOCIOLOGY OF KNOWLEDGE. (3) (Restriction: Not open to students who have taken SOCI 681.) A review of the current research in the sociology of knowledge. The focus will be on sociological studies of the formation, circulation and reception of scientific and artistic ideas, beliefs and practices, and the social configuration and social organization of the collectives involved in these processes.

SOCI 603 BIBLIOGRAPHIC METHODS 1. (3) (Corequisite: SOCI 604.) (Restriction: Restricted to Sociology M.A. students.) Research-related skills for the production of a research bibliography under the supervision of a faculty member.

SOCI 604 BIBLIOGRAPHIC METHODS 2. (3) (Corequisite: SOCI 603.) (Restriction: Restricted to Sociology M.A. students.) Advanced research-related skills for the production of a research bibliography under the supervision of a faculty member.

SOCI 652 CURRENT SOCIOLOGICAL THEORY. (3) (Prerequisite: SOCI 330) Examination of works in some major areas of Sociology with a focus on: antecedent thought and research in the area; the internal structure and consistency of these works; the validity of the major claims made; and the implications for future theoretical development and research.

SOCI 688 SOCIAL STATISTICS 1. (1.5) (Prerequisite: SOCI 504 or permission of Social Statistics Program advisor.) (Note: Students in the Social Statistics Option must take both SOCI 688 (Social Statistics 1) and SOCI 689 (Social Statistics 2).) (Restriction: Not open to students who have taken SOCI 688 prior to Winter 2007.) Social statistics seminar.

SOCI 689 SOCIAL STATISTICS 2. (1.5) (Prerequisite: SOCI 688 or permission of Social Statistics Program advisor.) (Note: Students in the Social Statistics Option must take both SOCI 688 (Social Statistics 1) and SOCI 689 (Social Statistics 2).) (Restriction: Not open to students who have taken SOCI 688 prior to Winter 2007.) Social statistics seminar.

SOCI 690 M.A. THESIS 1. (3) (Restriction: Open only to graduate students registered in the M.A. thesis program of the Sociology Department.) Exploratory thesis research for the selection of a thesis topic.

SOCI 691 M.A. THESIS 2. (6) (Restriction: Open only to graduate students registered in the M.A. thesis program of the Sociology Department.) Preparation, submission and approval of the thesis proposal by the student to his/her committee.

SOCI 696 RESEARCH PAPER 1. (3) (Restriction: Open only to graduate students registered in the M.A. thesis program of the Sociology Department.) Exploratory research for the selection of a research topic.

SOCI 697 RESEARCH PAPER 2. (3) Preparation, submission and approval of the proposal by the student to his/her supervisor.

SOCI 699 RESEARCH PAPER 4. (12) Completion, submission and approval of the research paper by the committee.
SOCI 700 Ph.D. AREA EXAMINATION 1. (0) (Restriction: Only open to Ph.D. students in the Sociology Department) The examination assesses the student’s breadth of knowledge in one substantive area. This is the first of two required comprehensive examinations for the Ph.D. Program.

SOCI 701 Ph.D. AREA EXAMINATION 2. (0) (Restriction: Only open to Ph.D. students in the Sociology Department) The examination assesses the student’s breadth of knowledge in one substantive area. This is the second of two required comprehensive examinations for the Ph.D. Program.

SOCI 702 PH.D. PROPOSAL APPROVAL. (0) (Restriction: Only open to Ph.D. students in the Sociology Department) The examination assesses the student’s breadth of knowledge in one substantive area. This is the second of two required comprehensive examinations for the Ph.D. Program.

SOCI 703 BIBLIOGRAPHIC METHODS 3. (0) (Restriction: Restricted to Sociology Ph.D. students) Further development of research-related skills and the production of a research bibliography under the supervision of a faculty member.

SOCI 704 BIBLIOGRAPHIC METHODS 4. (0) (Restriction: Restricted to Sociology Ph.D. students) Further development of research-related skills and the production of a research bibliography under the supervision of a faculty member.

SOCI 720 READING IN SOCIAL THEORY. (3)

SOCI 730 READING AND RESEARCH. (3)

78 Surgical Research

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Canada

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Email: gradstudies.surgery@mcgill.ca
Website: www.surgery-research.mcgill.ca

Director — L. Rosenberg
Associate Director — A. Philip
Administrative & Student Affairs Coordinator — I. Sidorenko

78.1 Staff

Professors
J.D. Bobyn; B.Sc., M.Sc.(McG.), Ph.D.(Tor.)
P. Brodt; B.Sc.(Bar-Ilan), M.Sc.(Ott.), Ph.D.(McG.)
R.G.-J. Chiu; M.B.(Taiwan), Ph.D.(McG.)
N.V. Christou; B.Sc., M.Sc., Ph.D., M.D.,C.M.(McG.)
M.M. Eihilali; M.B., B.Ch., D.S., DU, M.Ch.(Cairo), Ph.D.(McG.)
G.M. Fried; B.Sc., M.D.,C.M.(McG.)
C. Gagnon; B.Sc., M.Sc., Ph.D.(Montr.)
F. Gloreux; M.D.(Louvain), M.Sc.(Montr.), Ph.D.(McG.)
P.H. Gordon; M.D.(Sask.)
J.M. Laberge; M.D.(Laval)
D.S. Mulder; M.D.(Sask.), M.Sc.(McG.)
L. Rosenberg; M.Sc., M.D., Ph.D.(McG.)
P.J. Roughley; B.Sc., Ph.D.(Nott.)
R. St.Arnoud; Ph.D.(Laval)
M. Tanzer; M.D.,C.M.(McG.), F.R.C.S.(C)
C.I. Tchervenkov; B.Sc., M.D.,C.M.(McG.), F.R.C.S.(C)
H.B. Williams; B.A.(Acad.), M.D.,C.M.(McG.)

Associate Professors
J. Antoniou; M.D.,C.M., Ph.D.(McG.), F.R.C.S.(C)
J. Barkun; M.D., M.Sc.(McG.)
O. Blaschuk; B.Sc.(Winn.), M.Sc.(Man.), Ph.D.(Tor.)
S. Chevalier; B.Sc., M.Sc., Ph.D.(Montr.)
L. Feldman; M.D.,C.M., M.Sc.(McG.)
D. Fleiszer; B.Sc., M.D.,C.M.(McG.)
R.C. Hamdy; M.Sc., M.D.(Egypt), F.R.C.S.(C)
E. Harvey; B.Sc.(Ont.), M.D.,C.M., M.Sc.(McG.)
K.J. Lachapelle; M.Sc., M.D.,C.M.(McG.)
L. Lessard; B.Sc., M.D.(Laval), F.R.C.S.(C)
S. Meterissian; M.D.,C.M., M.Sc.(McG.)
P. Metrakos; B.Sc., M.D.(McG.), F.R.C.S.(C)
J.S. Mort; B.Sc.(McG.), Ph.D.(McM.)
A. Philip; M.Sc., Ph.D.(McG.)
P. Puligandla; M.D., M.Sc.(W. Ont.), F.R.C.S.(C)
J. Sampalis; M.Sc., Ph.D.(McG.)
D. Shum-Tim; M.Sc., M.D.,C.M.(McG.)
T. Steffen; M.D.(Switz.), Ph.D.(McG.)
T. Takeo-Hosotani; B.Sc., M.Sc., Ph.D.(Kyoto)
J.I. Tchervenkov; M.D.,C.M.(McG.), F.R.C.S.(C)
D. Zukor; B.Sc., M.D.,C.M.(McG.)

Assistant Professors
M. Basik; M.D.,C.M. (McG.)
J. Chen; B.Sc.(China), Ph.D.(Guelph)
M. Chevrette; B.Sc., M.Sc., Ph.D.(Laval)
J. Faria; M.D.,C.M., M.Sc.(McG.), F.R.C.S.(C)
L. Ferri; M.D.,C.M., M.Sc.(McG.)
J. Lapointe; M.D., Ph.D.(Laval)
E. Lee; B.A.(Boston), M.Sc., Ph.D.(McG.)
S. Paraskevas; M.D., Ph.D.(McG.)
M. Petrovaplovksaia; M.Sc., Ph.D.(Moscow)
A.D. Reckles; B.Sc.(McG.), Ph.D.(McM.)
K. Shaw; M.D.,C.M., M.Sc.(McG.)

78.2 Programs Offered

The Department of Surgery offers graduate programs leading to M.Sc. and Ph.D. degrees, and a Graduate Diploma in Surgical Health Care Research.

The main research interests in the Department include projects in islet cell differentiation and islet transplantation, tissue engineering of cardiac muscle, immunopathogenesis of liver xenograft rejection; the biology of tissue repair and fibrosis; cartilage regeneration, osteoinduction and biomechanics; sepsis and multi-organ failure; biology of cancer; sexual dysfunction and prostate cancer; and surgical health outcomes.

A list of research directors and a description of their research topics, as well as application forms may be obtained from our website (www.surgery-research.mcgill.ca).

78.3 Admission Requirements

Graduate Diploma in Surgical Health Care Research

The program is open to all graduate students in the Division of Surgical Research, but is specifically designed for surgical residents who have allotted time during their residency training. To be accepted into the Graduate Diploma Program students must be accepted into the Division of Surgical Research; fulfill the minimum requirements for admission to Graduate and Postdoctoral Studies; identify an acceptable and feasible research project; and identify an accredited faculty member willing to support the research and supervise the student. The program is under the direction of Professor John Sampalis.

M.Sc. Program

Usually a B.Sc., M.D. or D.V.M. degree, with a minimum CGPA of 3.2/4.0. Applications will be accepted from candidates sponsored by a research supervisor willing to provide laboratory space and direction for their research work.

Ph.D. Program

Admission is usually from the M.Sc. program either upon completion of the M.Sc. degree, or by transfer from the first year of M.Sc. to the second year of Ph.D. studies. Request for such transfer is to be made in writing by the thesis supervisor during the candidate’s first year of M.Sc. studies, not later than March 30 for students enrolled in September, or October 15 for those registered in January. The student must then apply for admission to the Ph.D. program in order to effect the transfer. Transfer is granted on
Depending on their individual background, students may be asked by their Research Supervisory Committee to take additional courses.

**Required Courses** (12 credits)
- EXSU 601 (6) Knowledge Management
- EXSU 606 (3) Statistics for Surgical Research
- EXSU 605 (3) Biomedical Research Innovation

**Complementary Course** (3 credits)
- 3 credits, one graduate-level course in the student's specialty, selected in consultation with the Research Supervisory Committee.

**Thesis Component – Required** (33 credits)
- EXSU 690 (4) M.Sc. Research 1
- EXSU 691 (4) M.Sc. Research 2
- EXSU 692 (4) M.Sc. Research 3
- EXSU 693 (21) M.Sc. Thesis

**Ph.D. in Experimental Surgery**
The minimum residence time in the program is three calendar years. In addition to those listed below, students are encouraged to select additional courses from allied disciplines relevant to their research topic.

Depending on their individual background, students may be asked by their Research Supervisory Committee to take additional courses.

**Required Courses** (12 credits)
- EXSU 601 (6) Knowledge Management
- EXSU 606 (3) Statistics for Surgical Research
- EXSU 605 (3) Biomedical Research Innovation

**Complementary Course** (3 credits)
- 3 credits, one graduate-level course in the student's specialty, selected in consultation with the Research Supervisory Committee.

**Comprehensive – Required**
- EXSU 700 (6) Comprehensive Examination

All Ph.D. students (admitted directly into the Ph.D. program, or those allowed to transfer from M.Sc. 1 to Ph.D. 2 without writing an M.Sc. thesis) must take the Comprehensive Examination.

The examination is to take place after 12 months of residence in the Ph.D. program, and will be administered by an expanded Research Supervisory Committee under its Chair.

The examination will have two components: an oral presentation of the candidate's research project, as well as a report in writing on an assigned research publication, and its oral presentation. The candidate must receive a pass mark in both components to continue in the Ph.D. program.

**Courses**

Students preparing to register should consult Class Schedule on the web at [www.mcgill.ca/student-records/register/class-schedule](http://www.mcgill.ca/student-records/register/class-schedule) for the most up-to-date list of courses available; courses may have been added, rescheduled or cancelled after this Calendar was published. Class Schedule lists courses by term and includes days, times, locations, and names of instructors.

Courses with numbers ending D1 and D2 are taught in two consecutive terms (most commonly Fall and Winter). Students must register for both the D1 and D2 components. No credit will be given unless both components (D1 and D2) are successfully completed in consecutive terms.

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

**EXSU 601 KNOWLEDGE MANAGEMENT.** (6) (1.5 hours/week) (Compulsory for students in the Department of Surgery and available to others by permission of the coordinators) Critical elements required for the preparation of abstracts and full-length manuscripts, and the creation and delivery of digital slide presentations.
EXSU 601D1 (3), EXSU 601D2 (3) KNOWLEDGE MANAGEMENT. (Students must register for both EXSU 601D1 and EXSU 601D2) (No credit will be given for this course unless both EXSU 601D1 and EXSU 601D2 are successfully completed in consecutive terms) (EXSU 601D1 and EXSU 601D2 together are equivalent to EXSU 601) Critical elements required for the preparation of abstracts and full-length manuscripts, and the creation and delivery of digital slide presentations.

EXSU 601N1 KNOWLEDGE MANAGEMENT. (3) (Students must also register for EXSU 601N2) (No credit will be given for this course unless both EXSU 601N1 and EXSU 601N2 are successfully completed in a twelve month period) (EXSU 601N1 and EXSU 601N2 together are equivalent to EXSU 601) Critical elements required for the preparation of abstracts and full-length manuscripts, and the creation and delivery of digital slide presentations.

EXSU 601N2 KNOWLEDGE MANAGEMENT. (3) (Prerequisite: EXSU 601N1) (No credit will be given for this course unless both EXSU 601N1 and EXSU 601N2 are successfully completed in a twelve month period) (EXSU 601N1 and EXSU 601N2 together are equivalent to EXSU 601) See EXSU 601N1 for course description.

EXSU 605 BIOMEDICAL RESEARCH INNOVATION. (3) (2 hours/week) (Compulsory for students in the Department of Surgery and available to others by permission of the coordinators) Introduction to the novel and/or emerging technologies in the field of biomedical research.

EXSU 606 STATISTICS FOR SURGICAL RESEARCH. (3) (2 hours/week) (Compulsory for students in the Department of Surgery and available to others by permission of the coordinators)...

EXSU 637D1 (4.5), EXSU 637D2 (4.5) RESEARCH PROJECT. (Students must register for both EXSU 637D1 and EXSU 637D2) (No credit will be given for this course unless both EXSU 637D1 and EXSU 637D2 are successfully completed in consecutive terms)

EXSU 684 SIGNAL TRANSMISSION. (3) (2 hours/week) (Restriction: Open to graduate students with prerequisites and U3 undergraduates with special permission)

EXSU 690 M.Sc. RESEARCH 1. (4)

EXSU 690D1 (2), EXSU 690D2 (2) M.Sc. RESEARCH 1. (Students must register for both EXSU 690D1 and EXSU 690D2) (No credit will be given for this course unless both EXSU 690D1 and EXSU 690D2 are successfully completed in consecutive terms) (EXSU 690D1 and EXSU 690D2 together are equivalent to EXSU 690)

EXSU 690N1 M.Sc. RESEARCH 1. (2) (Students must also register for EXSU 690N2) (No credit will be given for this course unless both EXSU 690N1 and EXSU 690N2 are successfully completed in a twelve month period) (EXSU 690N1 and EXSU 690N2 together are equivalent to EXSU 690)

EXSU 690N2 M.Sc. RESEARCH 1. (2) (Prerequisite: EXSU 690N1) (No credit will be given for this course unless both EXSU 690N1 and EXSU 690N2 are successfully completed in a twelve month period) (EXSU 690N1 and EXSU 690N2 together are equivalent to EXSU 690) See EXSU 690N1 for course description.

EXSU 691 M.Sc. RESEARCH 2. (4)

EXSU 691D1 (2), EXSU 691D2 (2) M.Sc. RESEARCH 2. (Students must register for both EXSU 691D1 and EXSU 691D2) (No credit will be given for this course unless both EXSU 691D1 and EXSU 691D2 are successfully completed in consecutive terms) (EXSU 691D1 and EXSU 691D2 together are equivalent to EXSU 691)

EXSU 691N1 M.Sc. RESEARCH 2. (2) (Students must also register for EXSU 691N2) (No credit will be given for this course unless both EXSU 691N1 and EXSU 691N2 are successfully completed in a twelve month period) (EXSU 691N1 and EXSU 691N2 together are equivalent to EXSU 691) See EXSU 691N1 for course description.

EXSU 691N2 M.Sc. RESEARCH 2. (2) (Prerequisite: EXSU 691N1) (No credit will be given for this course unless both EXSU 691N1 and EXSU 691N2 are successfully completed in a twelve month period) (EXSU 691N1 and EXSU 691N2 together are equivalent to EXSU 691) See EXSU 691N1 for course description.

EXSU 692 M.Sc. RESEARCH 3. (4)

EXSU 692D1 (2), EXSU 692D2 (2) M.Sc. RESEARCH 3. (Students must register for both EXSU 692D1 and EXSU 692D2) (No credit will be given for this course unless both EXSU 692D1 and EXSU 692D2 are successfully completed in consecutive terms) (EXSU 692D1 and EXSU 692D2 together are equivalent to EXSU 692)

EXSU 692N1 M.Sc. RESEARCH 3. (2) (Students must also register for EXSU 692N2) (No credit will be given for this course unless both EXSU 692N1 and EXSU 692N2 are successfully completed in a twelve month period) (EXSU 692N1 and EXSU 692N2 together are equivalent to EXSU 692)

EXSU 692N2 M.Sc. RESEARCH 3. (2) (Prerequisite: EXSU 692N1) (No credit will be given for this course unless both EXSU 692N1 and EXSU 692N2 are successfully completed in a twelve month period) (EXSU 692N1 and EXSU 692N2 together are equivalent to EXSU 692) See EXSU 692N1 for course description.

EXSU 693 M.Sc. THESIS. (21)

EXSU 693D1 (10.5), EXSU 693D2 (10.5) M.Sc. THESIS. (Students must register for both EXSU 693D1 and EXSU 693D2) (No credit will be given for this course unless both EXSU 693D1 and EXSU 693D2 are successfully completed in consecutive terms) (EXSU 693D1 and EXSU 693D2 together are equivalent to EXSU 693)

EXSU 693N1 M.Sc. THESIS. (10.5) (Students must also register for EXSU 693N2) (No credit will be given for this course unless both EXSU 693N1 and EXSU 693N2 are successfully completed in a twelve month period) (EXSU 693N1 and EXSU 693N2 together are equivalent to EXSU 693) See EXSU 693N1 for course description.

EXSU 700 COMPREHENSIVE EXAMINATION. (0)

EXSU 700D1 (0), EXSU 700D2 (0) COMPREHENSIVE EXAMINATION. (Students must register for both EXSU 700D1 and EXSU 700D2) (No credit will be given for this course unless both EXSU 700D1 and EXSU 700D2 are successfully completed in consecutive terms) (EXSU 700D1 and EXSU 700D2 together are equivalent to EXSU 700)

79 Urban Planning

School of Urban Planning
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Website: www.mcgill.ca/urbanplanning

Director — David F. Brown

79.1 Staff

Emeritus Professors
Jeanne M. Wolfe; B.Sc.(Lond.), M.Sc.(W. Ont.), M.A.(McG.)
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.(Calgary), Ph.D.(Calif., Berk.)
Raphael Fischler; B.Eng.(Eindhoven), M.Sc., M.C.P.(MIT), Ph.D.(Calif.)

Lisa Bornstein; B.Sc.(Calif., Berk.), M.R.P.(C’nell), Ph.D.(Calif.)
Assistant Professors
Ahmed Eigeneidy; B.S., M.S. (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
David Farley, Mario Polèse, Ray Tomalty

Guest Lecturers
Hatem Touman Abdelhamid, Daniel Hodder, Andrew Hoffmann, Paul Le Cavalier, Marc-André Lachesseur, Brenda Lee, Tom Leest, Eric Peissel, Carlos Rueda Plata, Richard Sheamur, Larry Sherman, Alain Trudeau, Martin Wexler, Joshua Wolfe

79.2 Programs Offered
The objective of the School is to produce qualified professional urban planners for the public and the private sectors. Training is provided at the post-graduate level; the degree offered is the Master of Urban Planning (M.U.P.). There are two formal specializations available: the M.U.P. with Urban Design and the Transportation Planning options. All M.U.P. students may also opt to spend a semester in Barbados as part of the Barbados Field Study Semester.

Upon completion of the two-year program of studies, 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.

The program of study offered by the School is fully recognized by the Ordre des Urbanistes du Québec (O.U.Q.) and the Canadian Institute of Planners (C.I.P.). Graduates can become full members of the O.U.Q. and other provincial planning associations by meeting their respective internship and examination requirements; this, in turn, will make them eligible for membership in the C.I.P., and for admission to the American Institute of Certified Planners (A.I.C.P.) and other such organizations.

Modern urban planning developed into a profession in the early decades of the twentieth century, largely as a response to the appalling sanitary, social and economic conditions of rapidly developing industrial cities. Initially, the disciplines of architecture, landscape architecture, civil engineering and public health provided the nucleus of concerned professionals; beautification schemes and infrastructure works marked the early stages of public intervention in the nineteenth century. Architects, engineers and public health specialists were joined by economists, sociologists, lawyers and geographers as the complexities of the city’s problems came to be more fully understood and public pressure mounted for their solution. Contemporary urban and regional planning techniques for survey, analysis, design and implementation developed from an interdisciplinary synthesis of these various fields, as did the practice of urban design.

Today, urban planning can be described as the collective management of urban development. It is concerned with the welfare of communities, control of the use of land, design of the built environment (including transportation and communication networks), and protection and enhancement of the natural environment. It is at once a technical and a political process which brings together actors from the public, private and community spheres. Planners participate in this process in a variety of ways, as designers, analysts, advocates and mediators, facilitating the search for equitable and efficient solutions to problems of urban growth and development.

McGill University was the first institution in Canada to offer a full-time planning program. An inter-disciplinary program was established in 1947, in which students combined a master's degree in Urban Planning with one in a related field. An autonomous program was established in 1972. It became the School of Urban Planning in 1976, a unit within the Faculty of Engineering. It has strong links with the School of Architecture, which is housed in the same building. The Urban Design option enables qualified students to specialize in this growing area of professional practice. Urban design practitioners work in concert with developers, architects, builders, and other key stakeholders on strategic interventions or projects. They develop clear guidelines that are used to shape the built environment as well as articulating plans in four dimensions, including space and time. Details are outlined on the Urban Design option website at www.mcgill.ca/urbandesign.

Students come to the School from diverse backgrounds, the physical sciences, the traditional professions, such as architecture and engineering, and the social sciences. Alumni of the School work as planners and designers at various levels of government, in non-profit organizations and with private consulting firms. Their expertise ranges from historic preservation to traffic management, from housing development to computer imaging. They devote their efforts in increasing numbers to environmental planning and sustainable development.

The School is a partner in the Montreal Interuniversity Group on Urbanization and Development, a consortium recognized by CIDA as a Centre of Excellence, which is devoted to the study of urban problems and the formulation of policies in developing regions. Faculty and students collaborate actively with members of other McGill departments, notably Architecture, Geography, Civil Engineering and Law, and with colleagues at other institutions in Montréal, across Canada, and abroad.

79.3 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.
2. Portfolio: For architects only, a portfolio containing at least five (5) examples of architectural work accomplished in school and in practice. (Portfolios are not to exceed 8½” x 11” in size.) For applicants to the urban design specialization, a portfolio containing at least ten (10) examples demonstrating creativity and imagination.
3. Curriculum Vitae.
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, CBT - 250, iBT - 100, with each component score not less than 23. The minimum score for the IELTS test is 7.0.

Dates for Guaranteed Consideration
For dates for guaranteed consideration, please consult the following website: www.mcgill.ca/gradapplicants/programs. Then select the appropriate program.

McGill’s online application form for graduate program candidates is available at www.mcgill.ca/gradapplicants/apply.

Awards and Financial Assistance
For information regarding awards and financial assistance, please refer to the Graduate Fellowships and Awards Calendar.

79.4 Program Requirements
Master of 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.
Students are required to prepare a Supervised Research Project which may take the form of investigative research, an impact study, a development project, or a plan. It may be undertaken jointly with another student.

**Required Courses** (27 credits)
- PUB1 004* (3) Land Use Planning
- URBP 609* (3) Planning Graphics
- URBP 612 (3) History and Theory of Planning
- URBP 622 (6) Planning Project 1
- URBP 623 (3) Planning Project 2
- URBP 624 (6) Planning Project 3
- URBP 633 (3) Planning Methods

* Students who have completed the material for courses marked with an asterisk may request permission from the instructor to substitute another course.

**Complementary Courses** (12 - 18 credits)
At least 12 credits, a minimum of 4 courses, must be selected from the following list. It is highly recommended that students complete at least one course in each of the disciplines: housing, transportation, environment and design.

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<td>URBP 634** (3)</td>
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**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 select additional courses that would be helpful in developing an in-depth knowledge of one or more subject areas in the field of planning. These courses must be taken at the 500 or 600 levels. They may be taken in any academic unit at McGill or at another university. Frequent choices include courses in real-estate analysis, urban geography, sociology, anthropology, law, politics, and environmental science. Students must confirm that the elective course(s) they select will be counted towards the M.U.P. degree prior to registration.

**Internship – Required** (6 credits)
- URBP 628 (6) Practical Experience

**Project Component – Required** (15 credits)
- URBP 630 (3) Supervised Research Project 1
- URBP 631 (6) Supervised Research Project 2
- URBP 632 (6) Supervised Research Project 3

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**Master of Urban Planning (Non-Thesis) – Transportation Planning Option/Concentration** (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.

**Required Courses** (54 credits)
- PUB1 004* (3) Land Use Planning
- URBP 505 (3) Geographic Information Systems
- URBP 609* (3) Planning Graphics
- URBP 612 (3) History and Theory of Planning
- URBP 619 (3) Transportation and Land Development
- URBP 622 (6) Planning Project 1
- URBP 623 (3) Planning Project 2
- URBP 624 (6) Planning Project 3
- URBP 628 (6) Practical Experience
- URBP 630 (3) Supervised Research Project 1
- URBP 631 (6) Supervised Research Project 2
- URBP 632 (6) Supervised Research Project 3
- URBP 633 (3) Planning Methods

* Students who have completed the material for courses marked with an asterisk may request permission from the instructor to substitute another course.

**Complementary Courses** (9 - 12 credits)
- CIVE 540 (3) Urban Transportation Planning
- 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 - 3 credits)
Students may take courses at the 500-level or higher offered by any academic unit at McGill or another Montreal university that are helpful in developing in-depth knowledge of one or more subject areas in the field of planning. Frequent choices include courses in real-estate analysis, urban geography, sociology, anthropology, law, politics, and environmental science. Students must confirm that the elective course(s) they select will be counted towards the M.U.P. degree prior to registration.

**Master of Urban Planning (Non-Thesis) – Urban Design Option/Concentration** (66 credits)

The Urban Design option allows 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 Design.

**Required Courses** (33 credits)
- PUB1 004* (3) Land Use Planning
- URBD 611 (6) Studio 1: Analysis and Concept
- URBD 612 (3) Seminar 1: Analysis and Concept
- URBD 613 (6) Studio 2: Project Development
- URBD 614 (3) Seminar 2: Project Development
- URBD 612 (3) History and Theory of Planning
- URBD 624 (6) Planning Project 3
- URBD 633 (3) Planning Methods

* Students who have completed the material for a course marked with an asterisk may request permission from the instructor to substitute another course.

**Complementary Courses** (12 credits)
6 credits; a minimum of two courses must be selected from the following:

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Students may select classes from among additional courses at the Université de Montréal with approval of the School.

6 credits; a minimum of two courses must be selected from the following:

- ARCH 520 (3) Montreal: Urban Morphology
- ARCH 521 (3) Structure of Cities
- ARCH 527 (3) Civic Design
- URBP 616 (3) Selected Topics 1
- URBP 621 (3) Principles of Urban Form

In order to satisfy this requirement, students may take graduate level courses that are equivalent at the Université de Montréal and have been approved by the School.

79.5 Courses

Students preparing to register should consult Class Schedule on the web at www.mcgill.ca/student-records/register/class-schedule for the most up-to-date list of courses available; courses may have been added, rescheduled or cancelled after this Calendar was published. Class Schedule lists courses by term and includes days, times, locations, and names of instructors.

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

URBP 611 STUDIO 1: ANALYSIS AND CONCEPT. (6) (6-2-10) (Prerequisite: Permission of instructor.) (Corequisite: URBP 612.) Analysis of local conditions, constraints and opportunities, existing urban forms and the development of conceptual plans.

URBP 612 SEMINAR 1: ANALYSIS AND CONCEPT. (3) (3-1-5) (Prerequisite: Permission of instructor.) (Corequisite: URBP 611.) Theoretical and methodological foundations for developing conceptual plans for a specific urban area.

URBP 613 STUDIO 2: PROJECT DEVELOPMENT. (6) (6-2-10) (Prerequisites: URBP 611 and URBP 612, or equivalent, and permission of instructor.) (Corequisite: URBP 614.) Development of detailed plans for urban design projects and of strategies for their implementation.

URBP 614 SEMINAR 2: PROJECT DEVELOPMENT. (3) (3-1-5) (Prerequisites: URBP 611 and URBP 612, or equivalent at UdeM, and permission of instructor.) (Corequisite: URBP 613.) Theoretical and methodological foundations for the development of urban design plans and strategies of implementation for a specific urban area.

URBP 501 PRINCIPLES AND PRACTICE 1. (2) (2-0-4) This six-week intensive course exposes students to issues and techniques that are applicable in diverse professional planning contexts. The subject matter, geographic area, scale of intervention and institutional location of planning varies from semester to semester. The course focuses on a specific case study and is taught by a visiting lecturer with professional experience in the selected subject matter.

URBP 504 PLANNING FOR ACTIVE TRANSPORTATION. (3) (3-0-6) The importance of transit, walking, and cycling as modes of transport in sustainable urban environments. Planning, design, and operation of mass transit systems, bikeways, and footpaths.

URBP 505 GEOGRAPHIC INFORMATION SYSTEMS. (3) (0-2-7) An introduction to fundamental geographic information system (GIS) concepts and a range of GIS applications in urban and regional planning.

URBP 506 ENVIRONMENTAL POLICY AND PLANNING. (3) (3-0-6) (Restriction: This course is open to students in U3 and above) Analytical and institutional approaches for understanding and addressing urban and other environmental problems at various scales; characteristics of environmental problems and implications of political-institutional context and policy instruments; risk perception and implications; cost-benefit analysis, risk assessment, multiple-objectives approaches, life-cycle analysis; policy implementation issues; case studies.

URBP 507 PLANNING AND INFRASTRUCTURE. (3) (8-5-5) (Restriction: Must be enrolled in the Barbados Field Study Semester.) An exploration of the interrelationship between land-use planning and infrastructure provision, especially water and sewerage. An examination of their policy and regulatory frameworks and other methodologies of plan making and evaluation.

URBP 519 SUSTAINABLE DEVELOPMENT PLANS. (6) (0-10-8) (Restrictions: Must be enrolled in Barbados Field Study Semester. Not open to students who have taken or are taking AGRI 519 or CIVE 519.) Geared for solving real-world environmental problems related to water at the local, regional and international scale in Barbados. Projects to be designed by instructors in consultation with university, government and NGO partners and to be conducted by teams of 2 to 4 students in collaboration with them.

URBP 520 GLOBALIZATION: PLANNING AND CHANGE. (3) (3-3-3) (Restriction: Must be enrolled in the Barbados Field study Semester.) Economic and social issues related to planning for sustainable development, with a focus on water. Political and environmental determinants of resource use. Impact of global, regional and local institutions, programs and plans, and impacts on Barbados and in the field locale in general.

URBP 530 URBAN ENVIRONMENTAL PLANNING. (3) (Note: Not open to students who have taken URBP 614.) Urban environmental planning with a focus on sustainability and smart growth. Consideration is given to the tools, techniques and processes that planners use to promote sustainable urban development. Local applications and community initiatives are addressed.

URBP 536 TRANSPORTATION SEMINAR 1. (1) Current transportation issues and topics are addressed from practitioner and academic perspectives.

URBP 537 TRANSPORTATION SEMINAR 2. (1) Current transportation issues and topics are addressed from the perspectives of both professional practitioners and academics.

URBP 538 TRANSPORTATION SEMINAR 3. (1) Current transportation issues and topics are addressed from the perspectives of both professional practitioners and academics.

URBP 605 GRADUATE SEMINAR. (3) This seminar is directed to the needs of individual students. It focuses on topics of special interest not included in the curriculum. It is given by members of staff as a tutorial.

URBP 607 READING COURSE: URBAN PLANNING. (3) The Reading Course offers an opportunity to explore, under the supervision of a staff member, subject areas relevant to urban planning.
URBP 608 ADVANCED GIS APPLICATIONS. (3) (Prerequisite(s): URBP 505 or permission of the instructor) (Restriction(s): Open to graduate students in Urban Planning, Urban Design, Civil Engineering, Geography (or permission of instructor)) Introduces students to real-world geographic information systems (GIS) problems and enhances the mastering of the geographic information systems as a tool for solving complex urban planning problems. Students will analyze several planning research problems spatially and introduce solutions to these issues.

URBP 609 PLANNING GRAPHICS. (3) Designed to familiarize the student with graphic techniques used in professional planning work, as well as to heighten environmental perception. Weekly lecture which reviews theory and practice followed by a weekly studio assignment involving the application of practical skills.

URBP 612 HISTORY AND THEORY OF PLANNING. (3) A review of planning history and theories of planning. These are examined under three categories: explanation of urban phenomena, substantive theory, and theories of process.

URBP 616 SELECTED TOPICS 1. (3) Special topics related to Urban Planning will be presented by staff and visiting lecturers.

URBP 617 SELECTED TOPICS 2. (3) Special topics related to Urban Planning will be presented by staff and visiting lecturers.

URBP 618 SELECTED TOPICS 3. (3) Special topics related to Urban Planning will be presented by staff and visiting lecturers.

URBP 619 LAND USE AND TRANSPORTATION PLANNING. (3) Analysis of transportation and land use interactions in urban areas. Study of the impacts of transportation systems on travel behaviour, residential and work location decisions, and urban form; discussion of implications for planning practice.

URBP 622 PLANNING PROJECT 1. (6) (studio) This studio introduces practical problems based on real world cases. Material covered includes: problem definition; data sources, collection and analysis; goal setting; the creative process; problem solving; and policy implications. Students work in interdisciplinary groups. Each studio terminates with an oral and graphic presentation of work to which expert critics are invited. Progress is evaluated according to performance in class, in the oral presentation, and on written reports.

URBP 623 PLANNING PROJECT 2. (3) This studio introduces practical problems based on real world cases. Material covered includes: problem definition; data sources, collection and analysis; goal setting; the creative process; problem solving; and policy implications. Students work in interdisciplinary groups. Each studio terminates with an oral and graphic presentation of work to which expert critics are invited. Progress is evaluated according to performance in class, in the oral presentation, and on written reports.

URBP 624 PLANNING PROJECT 3. (6) (Prerequisites: Planning Projects I and II) (Restriction: Not open to students who have taken URBP 604.) The second-year studio is designed to permit the study of planning problems in depth. Problems are chosen depending on the experience and research interests of the participants, or for their topical nature.

URBP 625 PRINCIPLES AND PRACTICE 2. (2) This six-week intensive course exposes students to issues and techniques which are applicable in diverse professional planning contexts that vary in terms of their subject matter, location, scale and the role played by planners. The course focuses on a specific case study and is taught by a visiting lecturer with experience in the selected subject area. Course topics are systematically varied over a two-year cycle.

URBP 626 PRINCIPLES AND PRACTICE 3. (2)

URBP 627 PRINCIPLES AND PRACTICE: DESIGN COMPETITION. (2) Participation in an externally-sponsored design competition approved by the School and supervised by a SUP faculty member. Analysis of competition guidelines and site(s); development of diagnostic, concept plan, and detailed design elements; preparation of materials stipulated in competition brief, such as boards, annotated drawings, models, and/or text(s).

URBP 628 PRACTICAL EXPERIENCE. (6) An internship related to the practice of urban planning is required. The practical experience must be of at least 3 months duration and be supervised by a professional in the planning field. An evaluation of the student's performance by the supervisor, as well as a short report by the student, forms the basis for assessment.

URBP 629 CITIES IN A GLOBALIZING WORLD. (3) (3-0-6) (Prerequisite: URBP 622 or permission of instructor) Cities and planning in comparative perspective; focus on the developing world. Topics covered include: global and local processes shaping cities worldwide, urban problems in developed and developing regions, and the impacts of planning and governance on urban form, economic growth, and equity.

URBP 630 SUPERVISED RESEARCH PROJECT 1. (3) The Supervised Research Project is intended to focus a student's interests on a particular area of enquiry at the end of studies for a Master's Degree in Planning. It should ideally provide the transition into practice or more advanced studies. Joint research projects are allowed.

URBP 631 SUPERVISED RESEARCH PROJECT 2. (6) Continuation of the requirements for the Supervised Research Project.

URBP 632 SUPERVISED RESEARCH PROJECT 3. (6) Continuation of the requirements for the Supervised Research Project.

URBP 633 PLANNING METHODS. (3) (Priority given to Urban Planning Students) An introduction to quantitative methods that are commonly used in urban research and planning practice. Topics include municipal information systems, fieldwork techniques, survey design and analysis, analysis of spatial and temporal patterns, and the evaluation of policies and plans.

URBP 634 PLANNING WATER RESOURCES IN BARBADOS. (3) (Restrictions: Must be enrolled in Barbados Field Study Semester. Only open to graduate students in architecture and urban planning.) Physical environment challenges faced by an island nation, with a focus on water resources. Private, government and NGO institutional context for conservation strategies. Water quantity and quality analyses for water management and planning specific to Barbados.

URBP 636 TRANSPORTATION SEMINAR. (1) Current transportation issues and topics are addressed from practitioner and academic perspectives.
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