FACULTY OF SCIENCE
MEETING OF FACULTY
Tuesday, October 15, 2013
3:00 p.m.
Leacock Council Room - L232

A G E N D A

Please note that before the meeting, new professors, recently tenured professors and recently promoted full professors will be introduced to the Faculty.

1.	Adoption of Agenda	
2.	Seating of Student Members	**S-13-1 On Web**
3.	Candidates for Degrees Director (Advising Services) Nicole Allard	
	a) Bachelor of Arts and Science	**S-13-2 To be Tabled**
	b) Bachelor of Science	**S-13-3 To be Tabled**
	c) Diploma in Environment	**S-13-4 To be Tabled**
	d) Diploma in Meteorology	**S-13-5 To be Tabled**
4.	Minutes of May 21, 2013	**S-12-33 On Web**
5.	Business Arising from the Minutes	
6.	Reports of Committees	
	a) Nominating Committee	**S-13-6 On Web**
	b) Scholarships Committee - Prof. Peter Grütter	**S-13-7 To Be Tabled**
	c) Academic Committee - Associate Dean Hendren	**S-13-8 On Web**
	d) Committee on Student Standing - Director Nicole Allard	**S-13-9 To Be Tabled**
7.	Dean's Business	
	a) Dean's Multidisciplinary Undergraduate Research List Director Nicole Allard	**S-13-10 To Be Tabled**
	b) Enrolment - Associate Dean Hendren	**S-13-11 To Be Tabled**
8.	Report on Actions of Senate - Prof. Graham Bell: Senate Meeting of September 15, 2013	
9.	Members' Question Period	
10.	Other Business	

FACULTY OF SCIENCE
Meeting of Faculty
Tuesday, May 21, 2013
Redpath Museum Auditorium

ATTENDANCE: As recorded in the Faculty Appendix Book.

DOCUMENTS: **S-12-23** **to** **S-12-32**

Dean Grant called the meeting to order at 3:00 p.m.

(1) ADOPTION OF AGENDA

Prof. Bell **moved**, seconded by Prof. Mucci, that the Agenda be adopted.

The motion carried.

(2) REPORTS OF COMMITTEES

a) Faculty of Science Excellence Award

902.1 Prof. Richard Koestner, Chair, said that for the 2012-2013 academic year, the Faculty of Science Excellence Award was given in the "M" Category.

The members of the Science Excellence Award Committee were:

Prof. Richard Koestner, Department of Psychology (Chair)
Ms. Ann Jack, School of Computer Science (C)
Ms. Lisa Maggio, Dean's Office (C)
Ms. Anna McNicoll, Department of Biology (T)
Mr. Richard Talbot, Department of Physics (T)
Ms. Raffaella Bruno, Dept. of Mathematics & Statistics (M)
Mr. Mark Romer, Department of Biology (M)

This year's nominees were:

Mr. Saveiro Biunno, Department of Physics
Ms. Ornella Cavaliere, Dept. of Atmospheric & Oceanic Sciences
Ms. Anne Kosowski, Department of Earth & Planetary Sciences
Ms. Nancy Nelson, Department of Biology

The Faculty of Science wishes to recognize Mr. Saveiro Biunno, Systems Administrator in the Department of Physics, with the Excellence Award for Management. Mr. Biunno was hired in 1971 and he has supervised the undergraduate labs since 1978.

The following two quotes capture Mr. Biunno's enormous contribution to the Physics Department:

"Saveiro ensures that students have the resources to get their work done. He works long hours and weekends: students always come first and he is always there to help… His dedication and organizational skills are the foundation on which the success of our undergraduate labs rests."

"Saveiro has fostered remarkable team work among the technicians he manages. They are a close-knit group that can always be counted on to provide timely help and advice."

The committee believes that Mr. Biunno richly deserves this award because of his invaluable contributions to McGill and the Physics department over the last 42 years. He has played a vital role in training generations of students.

~

902.2 Dean Grant congratulated Mr. Biunno and presented him with a certificate commemorating his receipt of the Faculty of Science Excellence Award (M).

902.3 Mr. Biunno said he appreciated the award very much, and he thanked the Department of Physics and the Faculty of Science.

b) Leo Yaffe Award

902.4 Prof. Edith Zorychta, Chair, said the Leo Yaffe Award is given each year to recognize a faculty member for superior teaching at the undergraduate level in the Faculty of Science.

Most of the members of the Leo Yaffe Award Committee were former Leo Yaffe Award winners. The members of the Committee were:

Prof. Edith Zorychta, Chair, Department of Pathology
Prof. Christopher Barrett, Department of Chemistry
Prof. Elaine Davis, Department of Anatomy & Cell Biology
Prof. Nicholas de Takacsy, Department of Physics
Ms. Caitlin Loo, Honours in Anatomy & Cell Biology
Prof. Alfonso Mucci, Department of Earth & Planetary Sciences
Prof. John Stix, Department of Earth & Planetary Sciences
Prof. Denis Thérien, School of Computer Science
Prof. Paul Wiseman, Department of Chemistry/Physics
Prof. Peter Yau, Department of Atmospheric & Oceanic Sciences

Since the Leo Yaffe Award was given for undergraduate teaching in the Faculty of Science, members of certain departments in the Faculty of Medicine were also eligible. The nominees for 2012-2013 were all superb candidates for the Leo Yaffe Award. The nominees were:

Prof. Ehab Abouheif, Department of Biology
Prof. Antony Raymond Humphries, Department of Mathematics and Statistics
Prof. John E. Lydon, Department of Psychology
Prof. Alex Maloney, Department of Physics
Prof. Craig Mandato, Department of Anatomy and Cell Biology
Prof. Dusica Maysinger, Department of Pharmacology & Therapeutics
Prof. Joelle Pineau, School of Computer Science
Prof. Wayne H. Pollard, Department of Geography

The citation for the 2012-2013 Leo Yaffe Award winner:

The recipient for 2013 is Professor John Lydon from the Department of Psychology – a superb teacher who, in his own words, is focused on two goals: to transmit knowledge and to train minds. He has developed effective and creative methods to convey knowledge in an engaging manner while simultaneously training minds to understand the

process by which we test and arrive at evidence. Student evaluations document how successful he has been, with consistently high scores and glowing testimonies to the impact of his distinctive teaching philosophy.

Professor Lydon received his PhD from the University of Waterloo and taught at the University of California, Los Angeles before joining McGill in 1990. He has established a strong research program in the Department of Psychology, and simultaneously has taught thousands of undergraduate students in two large and very popular courses on Social Psychology and on Interpersonal Relationships. He also directed the Honours Program in Psychology for over a decade, implementing revisions to increase student enrollment, and he has personally supervised 179 undergraduate research projects. Through class projects and individual mentoring, Dr. Lydon has given many students their first real opportunity to take an active part in project design and analysis, and this experience has laid the foundation for many subsequent careers in research and academia. One former student who is now a university professor in the United States, recalled the initial impact of being in his large class, and then being individually mentored during an undergraduate research project:

"Dr. Lydon's approach was to actively engage students in not only acquiring knowledge of research methods, but in applying this knowledge to develop and conduct a research study of their own. Working in small groups, we designed our own empirical studies in social psychology on a topic that was of interest to us…Dr. Lydon's warmth, enthusiasm for the field, and willingness to take time to listen to students' thoughts, ideas, concerns, and questions inspired his students to develop a deep appreciation for the importance of research in the field of psychology, and an understanding of how to translate ideas and theories into empirical research projects. These are the very qualities that are critical to the advancement of the field. I can't tell you how thrilling it was to analyze the data we had painstakingly collected (even though we found NO support for our hypothesis!), and to share our disappointment with such an encouraging and supportive instructor… Dr. Lydon gave me my first taste of what it is like to be a researcher, and this experience helped inspire me to pursue my doctorate in Psychology and a career in academia. His example continues to guide me in my own teaching and mentoring of undergraduate and doctoral students"

Enthusiasm, approachability, and a student-centered philosophy are repeatedly mentioned by students, with comments such as: *"Professor Lydon is an engaging, entertaining lecturer. He genuinely cares for his students, and manages to make a 700-student class feel like a small class. His lecturing style really favours learning."* One student summarized the experience in a single sentence: *"I leave class feeling as though I've learned something so significant that I can't look at the world the way I used to."* There could be no finer tribute to the effectiveness of this exceptionally talented and dedicated teacher.

~

902.5 On behalf of the Faculty of Science, Dean Grant congratulated Prof. Lydon on winning the 2012-2013 Leo Yaffe Award.

902.6 Prof. Lydon thanked the Department of Psychology, the Chair of the Department, Prof. David Zuroff, and Prof. Rhonda Amsel, for putting together the dossier submitted to the Committee.

(3) CANDIDATES FOR DEGREES

a)	Bachelor of Arts and Science	**S-12-24**
b)	Bachelor of Science	**S-12-25**
c)	Diploma in Environment	**S-12-26**
d)	Diploma in Meteorology	**S-12-27**

903.1 Director (Advising Services) Nicole Allard said that there were 94 graduands for the B.A. & Sc. degree, 782 for the B.Sc. degree, and 1 for the Diploma in Meteorology. The corresponding figures for 2012 were 69, 729, and 0.

903.2 Director Allard said that for the B.A. & Sc., the cut-off for the Dean's Honour List was 3.79, and the Distinction designation cut-off was 3.65. For the B.Sc., the figures were 3.90 and 3.74.

Director Allard **moved**, seconded by Mr. Barry, that the above degree lists be recommended to the Senate Steering Committee for their respective degrees/diploma.

The motion carried.

Director Allard further **moved**, seconded by Mr. Barry, that the Dean be given discretionary power to make such changes in the degree list as would be necessary to prevent injustice.

The motion carried.

903.3 Director Allard thanked everyone involved in preparing the degree lists.

(4) MINUTES OF FEBRUARY 18, 2013 **S-12-23**

Prof. Bell **moved**, seconded by Prof. Lydon, that the Minutes be approved.

The motion carried.

(5) BUSINESS ARISING FROM THE MINUTES

There was no business arising from the Minutes.

(6) REPORTS OF COMMITTEES (continued)

c) Academic Committee **S-12-28**

Academic Committee approved the following on Tuesday, March 26, 2013 and Tuesday, April 30, 2013.

SECTION A: New Courses

(1) Physics

PHYS 519	Advanced Biophysics 3 credits	**AC-12-62** **PRN 6251, V4**

Associate Dean Hendren described the new biophysics course.

Associate Dean Hendren **moved**, seconded by Prof. Jeon, that the course be adopted.

The motion carried.

(2) Environment & Economics

ENVR 430/ECON 430	The Economics of Well being 3 credits	**AC-12-73** **PRN 5488, V7**

Associate Dean Hendren introduced the new double-prefix course.

Associate Dean Hendren **moved**, seconded by Prof. Dudek, that the course be adopted.

The motion carried.

<u>SECTION B: Course Revisions</u>

B.Sc.

(1) Mathematics & Statistics

MATH 370	Honours Algebra 3 Change in prerequisites 3 credits	**AC-12-59** **PRN 6008, V3**

Associate Dean Hendren described the changes.

Associate Dean Hendren **moved**, seconded by Prof. Wolfson, that the course be approved.

The motion carried.

(2) Computer Science

COMP 533	Model-Driven Software Develop. Changes in title, description 3 credits	**AC-12-77** **PRN 6458, V1**

Associate Dean Hendren outlined the changes.

Associate Dean Hendren **moved**, seconded by Prof. Shultz, that the course be approved.

The motion carried.

COMP 546	Computational Perception Number change [from 646]; changes in description, restriction, administering faculty 4 credits	**AC-12-61** **PRN 5202, V1**

Associate Dean Hendren described the changes to COMP 546.

Associate Dean Hendren **moved**, seconded by Prof. Wolfson, that the course be approved.

The motion carried.

(3) Biology & Physics

BIOL 319/PHYS 319	Introduction to Biophysics Changes in description and prerequisites 3 credits	**AC-12-64** **PRN 6169, V6,** **PRN 6246, V1**

Associate Dean Hendren went over the changes to the BIOL 319/PHYS 319 double-prefix course.

Associate Dean Hendren **moved**, seconded by Prof. Jeon, that the course be approved.

The motion carried.

(4) B.A. & Sc.

COGS 402	Research Cognitive Science 2 Course retirement 6 credits	**MCC-12-4**

Associate Dean Hendren explained the reasons for the retirement of COGS 402.

Associate Dean Hendren **moved**, seconded by Prof. Shultz, that the course be approved.

The motion carried.

<u>SECTION C: Minor And Moderate Revisions to Programs</u>

B.Sc.

(1) Mathematics

- Honours in Applied Mathematics **AC-12-60**

Associate Dean Hendren described the changes to the above Honours program.

Associate Dean Hendren **moved**, seconded by Prof. Wolfson, that the changes be approved.

The motion carried.

(2) Biology

- Honours (First Class) in Biology **AC-12-63**

906.1 Associate Dean Hendren said that there was some confusion regarding the credit and other requirements for First Class Honours in Biology. It was agreed the proposal would be tabled pending clarification.

- Honours in Biology: Quantitative Biology ***(New Option)*** **AC-12-65**

906.2 It was agreed that the proposal for the new option also be tabled, and be considered eventually along with the Honours (First Class) in Biology.

(3) Chemistry

Program Retirement:

- M.Sc. Applied (M.Sc.A.) in Chemistry (Non-Thesis) **AC-12-66A**

Associate Dean Hendren said that the program was no longer needed.

Associate Dean Hendren **moved**, seconded by Prof. Harpp, that the changes be approved.

The motion carried.

(4) Pharmacology & Therapeutics

-Major in Pharmacology **AC-12-75**

-Honours in Pharmacology **AC-12-76**

906.3 Associate Dean Hendren described the changes and the rationale for them. She added that while consultation reports did not object to the addition of courses to the programs, it had been pointed out that many of the courses were already full.

Associate Dean Hendren **moved**, seconded by Prof. Ariya, that the changes be approved.

The motion carried.

(5) McGill School of Environment

-BSc. Environment; Food Production and Environment Domain **AC-12-74**

906.4 Associate Dean Hendren outlined the changes to the domain. She remarked that the layout of the explanations for the changes on the program revision form had been very well designed.

Associate Dean Hendren **moved**, seconded by Prof. Roulet, that the changes be approved.

The motion carried.

(6) B.A. & Sc.

- B.A. & Sc. Freshman Program **AC-12-57**

Associate Dean Hendren said that the changes were designed to broaden the freshman program, and to offer students more options.

Associate Dean Hendren **moved**, seconded by Prof. Dudek, that the changes be approved.

The motion carried.

Program Retirement:

- Major Concentration in Earth, Atmosphere and Ocean Sciences **AC-12-58**

Associate Dean Hendren explained that the design of the Major Concentration prohibited a desirable depth in courses.

Associate Dean Hendren **moved**, seconded by Prof. Ariya, that the changes be approved.

The motion carried.

<u>SECTION D: Other</u>

(1) Course Retirements **AC-12-66**

906.5 Associate Dean Hendren explained that the University wanted to retire low-enrolment courses. A list of these had been submitted to the Faculty, and then to departments for approval. Departments then provided justification for any courses they wanted retained.

Document AC-12-66 was submitted back to SCTP for approval, in order that departments could retain courses they wanted to keep. She added that Faculty should approve Document AC-12-66, in order for Faculty to retain formal control over retirements of low-enrolment courses.

Associate Dean Hendren **moved**, seconded by Prof. Harpp, that Document AC-12-66 be approved.

The motion carried.

(2) DMURL for B.A. & Sc. **AC-12-67**

906.6 Associate Dean Hendren said that B.A. & Sc. students had wanted the opportunity to have on their transcripts the designation "Dean's Multidisciplinary Undergraduate Research List," in the same way that B.Sc. students had. This list would represent only research in the Faculty of Science. If the Faculty of Arts wished to approve an analogous list, that would be up to Arts.

Associate Dean Hendren **moved**, seconded by Prof. Shultz, that the DMURL for B.A. & Sc. students be approved.

The motion carried.

(3) **Computer Science** *(For Information Only)*
Minor in Computer Science for Engineering Students **AC-12-78**

(4) Teaching Evaluations

906.7 Dean Grant explained that the current default for course evaluations was for instructors to have to give explicit permission for evaluations to be made public. He was now asking Faculty for approval to change the default to making course evaluations public, with instructors having to explicitly veto this.

Prof. Harpp **moved**, seconded by Prof. Lennox, that the above change be approved.

The motion carried.

(5) **McGill School of Environment** *(For Information Only)*
-B.Sc. (Ag.Env.Sc.) Environment; Food Production and Environment Domain

(6) **Mathematics** *(For Information Only)*
- B.A.; Honours in Applied Mathematics

(7) Director (Advising Services) Nicole Allard

(i) Senate Amendment to Assessment Policy (*For Information Only*) **AC-12-68**

906.8 Director Allard said the Senate Meeting of January 23, 2013 had approved final examinations being worth more than 75% for students who had been given permission to write deferred midterm examinations, but had not been able to write them for documented reasons.

(ii) Faculty of Science Guidelines: Assignment Due Dates **AC-12-69**

906.9 Director Allard said the current Faculty policy for courses without final examinations, was that the last day of classes was the due date to submit written assignments. The proposed guidelines for courses with no final examinations, would make the due date for written assignments the last day of the final examination period, provided grades could be submitted on time.

Director Allard **moved**, seconded by Mr. Barry, that the revised Assignment Due Dates (AC-12-69) be approved.

The motion carried.

d) Committee on Student Standing S-12-29

Director Allard said that one request (for appeal of transfer credit) had been submitted to the Committee. The request was not approved.

e) Scholarships Committee S-12-30

906.10 Prof. Barbara Sherwin, on behalf of Associate Dean Grütter, announced that **Ms. Daisy Xiaoxi Ji**, First Class Honours in Immunology, had been awarded a 2013 Governor General's Silver Medal. There are only two medals given each year for the entire university. In the past 25 years, Science has received 24 medals. The medal will be presented at the Faculty of Science Convocation ceremony on May 27, 2013.

Prof. Sherwin also announced that the winner of the 2013 Moyse Travelling Scholarship was **Mr. Jaan Altosaar**, First Class Honours in Mathematics & Physics.

Prof. Sherwin drew members' attention to the Scholarships Report, Document S-12-30.

(7) <u>DEAN'S BUSINESS</u>

a) Dean's Multidisciplinary Undergraduate Research List (DMURL) S-12-31

Dean Grant pointed out that the number of students on the DMURL had steadily increased over the years.

b) David Thomson Award for Graduate Supervision and Teaching

907.1 Dean Grant announced that the 2013 David Thomson Award for Graduate Supervision and Teaching had been awarded to **Prof. Henri Darmon**, Department of Mathematics & Statistics. Dean Grant read from a congratulatory letter from Associate Provost (Graduate Education) Martin Kreiswirth, to Prof. Darmon, and also extended congratulations on behalf of the Faculty of Science. The award and a citation will be presented to Prof. Darmon at the Faculty of Science Convocation, on Monday, May 27, 2013.

907.2 Prof. Darmon thanked his colleagues in the Department of Mathematics & Statistics for nominating him. He said that supervising graduate students was a reward in itself.

c) Announcements

Dean Grant announced the following Chair changes:

Chemistry

Prof. Bruce Lennox was stepping down after 12 years, to be replaced by Prof. Masad Damha.

Earth & Planetary Sciences
Prof. Andrew Hynes was leaving the post after 3 years, and would be replaced by Prof. Alfonso Mucci.

Physics
Prof. Charles Gale, after 8 years, would be replaced by Prof. Peter Grütter.

Dean Grant also announced that Prof. Peter Grütter would be replaced as **Associate Dean (Research and Graduate Education)** by Prof. Vicky Kaspi from the Department of Physics.

On behalf of the Faculty, Dean Grant thanked the outgoing people, and wished a warm welcome to their replacements.

d) Programme for the Tomlinson Project

907.3 Prof. David N. Harpp, Chair of the Tomlinson Project in Science Undergraduate Education, said that after a period of dormancy, he would like to revive the Tomlinson Project. The Tomlinson Project was originally started around 2001, and its first Chair had been Prof. Brian Alters, who has since left the University. There had been problems in finding a replacement, but now Prof. Harpp himself had been named Chair.

907.4 Prof. Harpp said that he had spent the last several months devising directions the Project could take. Unfortunately, due to the economic downturn, less money was now available than previously.

907.5 He said that a principal focus would be on undergraduate peer teaching, which he believed had great potential. He had become involved in undergraduate peer teaching about four years earlier, regarding the World of Chemistry courses. A number of undergraduates who had achieved high marks in the courses and who were outgoing and motivated, had been recruited to lead discussion groups with students currently taking the World of Chemistry courses. The groups met in various rooms during the late afternoon.

907.6 Prof. Harpp said he would like to introduce Tomlinson Teaching Awards, which would provide undergraduates a stipend ($100 - $300) for their work in peer teaching. Such students would be able to record their experience on their C.V.s. Although he did not wish to commit to hard numbers, probably more than 100 students could be involved in this in the first year.

907.7 There were in the Faculty of Science around 50 courses with enrolments of more than 300 students, and about 150 courses with more than 100 students. Prof. Harpp said that he thought there would be great enthusiasm for undergraduate peer teaching in the Faculty, from both professors and students. Academic staff would have to recruit the undergraduate peer teachers, vet them, and hire them. Payment of the stipend would be done at the end of each semester.

907.8 Prof. Harpp said that there were about 6 Tomlinson Fellows who receive a stipend of around $3000. These fellows could give seminars on teaching skills to undergraduates. This would be used in conjunction with the peer teaching program.

907.9 Another Tomlinson Project possibility would be to provide money (of the order of $1000) to allow professors to engage students in small projects.

907.10 Prof. Harpp also mentioned that much outreach was being done by McGill, but that this was not coordinated. Perhaps Tomlinson money could be put towards a more coordinated approach to outreach, and to extend outreach further.

907.11 Prof. Harpp said that he just wanted to let members of the Faculty know that Tomlinson money was available and that initiatives were being looked into. He would be sending announcements to Chairs whose units teach science students. If people had suggestions regarding the Tomlinson Project, he would welcome their ideas.

907.12 Dean Grant said that the Faculty was pleased that Prof. Harpp had agreed to serve as Chair of the Tomlinson Project. Prof. Harpp already had a lot of ideas and plans for going forward. He said the Faculty looked forward to seeing the successes Prof. Harpp will have with the Tomlinson Project.

(8) RESULTS OF SCIENCE ELECTION FOR SENATE S-12-32

Dean Grant announced the results of the recent e-election for Science Senators. The following people were elected:

Prof. Gregory Dudek (Computer Science)
Prof. Jacques Hurtubise (Mathematics & Statistics)
Prof. Timothy Moore (Geography)
Prof. David Zuroff (Psychology)

Their terms will end on August 31, 2016.

Continuing Faculty representatives on Senate, and remaining years to serve, are:

Prof. Graham Bell (Biology)	- two years
Prof. Peter Grütter (Physics)	- one year
Prof. David Harpp (Chemistry)	- two years
Prof. Bruce Lennox (Chemistry)	- one year
Prof. Nigel Roulet (Geography)	- one year

Dean Grant congratulated the newly elected Senators, and expressed his thanks to the continuing Senators.

(9) REPORTS ON ACTIONS OF SENATE

Please note that the entire Minutes of Senate are available on the Web at http://www.mcgill.ca/senate/senate-2012-2013/senate-2012-2013-meeting-documents

- Senate Meeting of February 19, 2013:

Prof. Charles Gale will report on the above Senate meeting at the first Faculty of Science meeting in fall 2013.

- Senate Meeting of March 20, 2013: Prof. Nigel Roulet

The Senate meeting of March 20th opened as does every other Senate meeting with the Report of the Steering Committee, Adoption of the Agenda, and the Chair's Remarks.

The Principal announced that Dr. Suzanne Fortier, the outgoing President of NSERC, was going to be the next Principal and Vice Chancellor of McGill University. This was not a surprise to any of the Senators. She reviewed the cuts to Quebec universities as of March 20, 2013 and mentioned "bring your child to work" program. She ended her remarks with kudos.

Part A "Questions and Motions by Members" was a little more lively than usual. The first question dealt with the serious and important issue of Student Mental Health. The Deputy Provost (Student Life and Learning) answered the question outlining the services that are available for students, recognizing there is a problem with counseling wait times and talked about a number of initiatives such as creating more groups for depression and anxiety disorders and the de-stress sessions for the examinations. He is convening a Mental Health Review Work Group to look at access to services and enhancing student mental well-being.

Senator Lu asked a question about how McGill University decided to join massive open online courses or MOOCs, given she did not think Senate approved the idea. This was an interesting set of exchanges that debated the role of Senate and the role of the Administration is decisions affecting the University. It boiled down to Senate provides endorsement for initiatives in the broad sense the affect the academic nature of the institution and specific approvals to the academic means by approving providing courses and programs, while the Administration administers the University. Any specific MOOC will have to go through the regular academic approval process, of which Senate is the final body of approval. I think this was a healthy debate. There was a second related question on the specifics of the timing of McGill's partnership with edX. The Provost was very clear that it is the Administration responsibility to negotiate partnerships, not Senate, and that the Administration was in discussion with edX before the discussion at Senate. There were issues of confidentiality and announcement embargos that prohibited the Provost from speaking about speaking specifically about the discussion with edX at the time. He pointed out that this is often the case with operating the University.

The questions concluded with a question on the composition and qualification of Senate which was answered by Secretary General Strople with his normal elocution, and in typical Senate fashion has been referred to the Senate Nominating committee to propose terms of reference and membership for a review committee on the composition and qualifications of Senate. This does not mean the review committee will be struck – it means it will be discussed at Nominating.

Part B of Senate started with an open discussion on professorial/student interactions facilitated by Senators Mendelson, Mooney and our very own Professor Harp. Mendelson presented the results of student surveys that showed McGill was average. There appears to be little interaction in large classes and progressively greater levels of interaction in later years. A startling finding! Various Senators spoke on ways to increase interactions such as getting undergraduates involved in research activities, mentoring, and breaking large classes down into smaller study groups. The discussion then shifted to supervisor – graduate student relationships. After some discussion a Dean familiar to us all offered that this requires coordination among Chairs, Graduate Directors and GPS.

Professor Lydia White, Associate Provost (Policies, Procedures and Equity), presented a detailed description on the Revisions to the Code of Student Conduct and Disciplinary Procedures. This was for information to prepare Senate for approval at the next meeting.

Senate then heard the reports of APC and the Nominating Committee and approved all items brought forward.

There was then a motion on the Statement of Principles Concerning Freedom of Expression and Freedom of Peaceful Assembly that was, after considerable discussion, again lively and somewhat animated, approved in its original form. The precise text of the Statement is in document D12-51 for the March 20th Senate meeting. This was followed by a related presentation for information by Mr. Michael Di Grappa, Vice Principal (Administration and Finance) on the Operating Procedures Regarding Demonstrations, Protests and Occupations on McGill University Campuses.

Senate concluded with a brief report from the Advisory Council on the Charter of Student Rights and much to the disappointment of all, the information update on ASAP 2012 implementation was tabled until the next Senate meeting.

Senate was adjourned at around quarter to six – it seemed much longer than that!

- Senate Meeting of April 17, 2013: Prof. Graham Bell

There will be no Report on the Senate Meeting of April 17, 2013.

- Senate Meeting of May 15, 2013: Prof. Gregory Dudek

There will be no written Report on the Senate Meeting of April 17, 2013.

(10) MEMBERS' QUESTION PERIOD

There were no members' questions.

(11) OTHER BUSINESS

911.1 Dean Grant invited members to attend the first annual Faculty of Science Anthony Kiang Recognition Event in Thomson House. He said that it was the only endowed celebratory event for support staff that he knew of in any university.

There being no further business, the meeting adjourned at 4:20 p.m.

FACULTY OF SCIENCE
NOMINATING COMMITTEE REPORT
2013-2014

(1) SCIENCE NOMINATING COMMITTEE - For Information

Chair: Dean Martin Grant
Convenor: Prof. Peter Grütter (Physics) [August 2014]
Prof. Graham Bell (Biology) [August 2015]
Prof. David Harpp (Chemistry) [August 2015]
Prof. Bruce Lennox (Chemistry) [August 2014]
Prof. Gregory Dudek (Computer Science) [August 2016]
Prof. Timothy Moore (Geography) [August 2016]
Prof. Nigel Roulet (Geography) [August 2014]
Prof. Jacques Hurtubise (Mathematics & Statistics) [August 2016]
Prof. David Zuroff (Psychology) [August 2016]

(2) SCIENCE CHAIRS' COUNCIL - For Information

Chair: Dean Martin Grant
Associate Dean (Academic) Laurie Hendren [September 2011 – May 2014]
Associate Dean (Research & Graduate Education) Victoria Kaspi [June 2013 – May 2015]
Director (Advising Services) Nicole Allard [June 2007 –]
Prof. John Gyakum ((Atmospheric & Oceanic Sciences) [September 2013 – August 2016]
Prof. Graham Bell (Biology) [June 2011 – May 2016]
Prof. Masad Damha (Chemistry) [June 2013 – May 2018]
Prof. Gregory Dudek (School of Computer Science) [September 2013 – August 2016]
Prof. Alfonso Mucci (Earth & Planetary Sciences) [June 2013 – May 2016]
Prof. Timothy Moore (Geography) [September 2011 – August 2014]
Prof. Jacques Hurtubise (Mathematics & Statistics) [January 2009 – May 2015]
Prof. Nancy Ross (McGill School of Environment) [September 2013 –August 2018]
Prof. Peter Grütter (Physics) [June 2013 – May 2018]
Prof. David Zuroff (Psychology) [June 2010 – May 2014]
Prof. David Green (Redpath Museum) [June 2010 – May 2015]

(3) TENURE COMMITTEE - For Information

Chair: Dean Martin Grant
Alternate Chairs: Prof. Niky Kamran (Mathematics & Statistics) [2015]
Prof. Nancy Ross (Geography) [2014]
Prof. Jeffrey Mogil (Psychology) [2014]
Prof. Bettina Kemme (Computer Science) [2013]
Prof. Scott Bohle (Chemistry) [2013]

Prof. Hanadi Sleiman (Chemistry) [2013]
Prof. Brigitte Vachon (Physics) [2015]
Prof. David Wolfson (Mathematics & Statistics) [2015]

(4) <u>COMMITTEE ON STUDENT STANDING</u> – For approval

Chair: Prof. Eric Galbraith (Earth & Planetary Sciences)
Prof. Daniel Kirshbaum (Atmospheric & Oceanic Sciences)
Prof. Frédéric Guichard (Biology)
Prof. Martin Robillard (Computer Science)
Prof. Benjamin Forest (Geography)
Prof. Johanna Neslehova (Mathematics & Statistics)
Prof. William Coish (Physics)
Prof. Rhonda Amsel (Psychology)
Prof. Hans Larsson (Redpath)
Four Student Representatives:
Mr. Abhishek Gupta (Computer Science)
Mr. Ryan Chan (Interdepartmental Honours in Immunology)
Mr. Benjamin Fung (Pharmacology)
Mr. Simon Bilodeau (Physics)

(5) <u>ACADEMIC COMMITTEE</u> – For approval

Chair: Dean Martin Grant
Vice-Chair: Associate Dean (Academic) Laurie Hendren
Director (Academic Advisors) Nicole Allard
Prof. Justin Kollman (Anatomy & Cell Biology)
Prof. Daniel Kirshbaum (Atmospheric & Oceanic Sciences)
Prof. Julie St-Pierre (Biochemistry)
Prof. Thomas Bureau (Biology)
Prof. Amy Szuchmacher Blum (Chemistry)
Prof. Bettina Kemme (School of Computer Science)
Prof. Anthony Williams-Jones (Earth & Planetary Sciences)
Prof. Lea Berrang Ford (Geography)
Prof. Vojkan Jaksic (Mathematics & Statistics)
Ms. Kathy Roulet (McGill School of Environment)
Prof. Greg Marczynski (Microbiology & Immunology)
Prof. Barbara Hales (Pharmacology)
Prof. Guy Moore (Physics)
Prof. Ana Nyzhnyk (Physiology)
Prof. Gillian O'Driscoll (Psychology)
Ms. Sara Holder (Schulich Library of Science & Engineering)
Seven Undergraduate Student Representatives:
Ms. Caitlin Loo (Anatomy & Cell Biology)
Ms. Emily Stewart (Anatomy & Cell Biology)
Mr. Jose Manuel Ceppi (Atmospheric Sciences & Physics)

Mr. Peter (Tian) Zhi (Biochemistry)
Mr. Gregory Johnston (Biology)
Mr. Bill (William) Motsch (Chemistry)
Mr. Alexander Norton (Computer Science)
One Graduate Student: TBA

(6) <u>SCHOLARSHIPS COMMITTEE</u> – For approval

Chair: Associate Dean (Research & Graduate Education) Victoria Kaspi
Prof. Justin Kollman (Anatomy & Cell Biology)
Prof. Yi Huang (Atmospheric & Oceanic Sciences)
Prof. José Teodoro (Biochemistry)
Prof. Tamara Western (Biology)
Prof. Mark Andrews (Chemistry)
Prof. Luc Devroye (School of Computer Science)
Prof. Olivia Jensen (Earth & Planetary Sciences)
Prof. Dani Wise (Mathematics & Statistics)
Prof. Brian Leung (McGill School of Environment)
Prof. Greg Matlashewski (Microbiology & Immunology)
Prof. Fritz Buchinger (Physics)
Prof. Ana Nyzhnyk (Physiology)
Prof. Heungsun Hwang (Psychology)

(7) <u>LEO YAFFE & PRINCIPAL'S PRIZES COMMITTEE</u> – For approval

Chair: Prof. Edith Zorychta [August 2014]
Prof. Peter Yau (Atmospheric & Oceanic Sciences) [August 2014]
Prof. Elaine Davis (Anatomy & Cell Biology) [August 2013]
Prof. Martin Lechowicz (Biology) [August 2014]
Prof. Paul Wiseman (Chemistry & Physics) [August 2015]
Prof. Denis Thérien (Computer Science) [August 2015]
Prof. John Stix (Earth & Planetary Sciences) [August 2014]
Prof. Bernhard Lehner (Geography)
Prof. Eyal Goren (Mathematics & Statistics)
Prof. Alvin Shrier (Physiology)
Prof. Richard Koestner (Psychology) [August 2016]
Two Student Representatives:
Mr. Simon Bilodeau (Physics)
Mr. Benjamin Fung (Pharmacology)
Plus Six Alternates Nominated by SUS
Ms. Caitlin Loo (Anatomy & Cell Biology)
Mr. Ryan Chan (Interdepartmental Honours in Immunology)
Mr. Taiji Wang (Neuroscience)
Mr. Jerry Yu-Chieh Wei (Statistics & Computer Science)
Mr. Kuan-Ting (Michael) Chen (Physiology)
Mr. Enoch Leung (Psychology)

(8) <u>COUNCIL OF GRADUATE AND POSTDOCTORAL STUDIES</u> – For approval

Prof. Gregory Brown (Biology) [May 2015]
Prof. Bettina Kemme (Computer Science) [May 2014]
Prof. David Wolfson (Mathematics & Statistics) [May 2015]

Note: Only Science Membership is for Approval:
(9) <u>B.A. & Sc. PROGRAM ADMINISTRATION COMMITTEE</u>

Chair: Associate Dean (Academic) Laurie Hendren [August 2014]

Science Members:
Prof. Bruce Arndtsen (Chemistry) [August 2014]
Prof. Louis Lefebvre (Biology) [August 2014]

Advisor: Director Nicole Allard (SOUSA)

Program Director: Prof. Gabriella Coleman (Art History and Communication Studies) [August 2015]

Arts Members:
Associate Dean (Academic) Gillian Lane-Mercier [August 2015]
Prof. Tobias Rees (Social Studies of Medicine) [August 2015]
Prof. Stéfan Sinclair (Languages, Literatures and Cultures) [August 2015]

Two Student Representatives:
Payal Patel (Major Concentration in Psychology; Major Concentration Political Science)
Saurin Shah (Honours in Cognitive Science; Minor Concentration in Linguistics)

FACULTY OF SCIENCE ACADEMIC COMMITTEE

Report to Faculty of Science Meeting of October 15, 2013

The Academic Committee approved the following on Tuesday, September 24, 2013:

SECTION A: COURSE CHANGES

- **Earth & Planetary Sciences**

EPSC 320	Elementary Earth Physics Prerequisites 3 credits	**AC-13-3**
EPSC 350	Tectonics Prerequisite 3 credits	**AC-13-4**
EPSC 482 D1/D2	Res in Earth & Planetary Sci Title, description, supplementary Calendar information 3 credits	**AC-13-5**
EPSC 561	Ore-forming Processes Title 3 credits	**AC-13-6**
EPSC 562	Ore-forming Processes 2 Course retirement 3 credits	**AC-13-7**

SECTION B: PROGRAM CHANGES

1) **Minor in Education For Science Students** **AC-13-2**

2) **Earth & Planetary Sciences**

- M.Sc.; Earth and Planetary Sciences **AC-13-8**
- M.Sc.; Earth and Planetary Sciences – Environment Option **AC-13-**9
- Ph.D.; Earth and Planetary Sciences **AC-13-10**
- Ph.D.; Earth and Planetary Sciences – Environment Option **AC-13-11**

SECTION C: OTHER (For Information Only)

- Courses on Dean's Multidisciplinary Undergraduate Research List (DMURL) **AC-13-1**
- Teaching Evaluations

Revision for EPSC 320

Proposal Reference Number	: 6788
PRN Alias	: 13-14#201
Version No	: 2
Submitted By	: Ms Kristy Thornton
Edited By	: Ms Josie D'Amico

Display Printable PDF

Summary of Changes	Prerequisites

	Current Data	New Data
Program Affected?		N
Program Change Form Submitted?		
Subject/Course/Term	EPSC 320 • one term	
Credit Weight or CEU's	3 credits.	
Course Activities	• A - Lecture • L - Laboratory	
Course Title	Course Title on Transcript: Elementary Earth Physics Course Title on Calendar: Elementary Earth Physics.	
Rationale		The addition of MATH133 to MATH222 as pre-requisite better reflects the background required to succeed in the course.
Responsible Instructor		
Course Description	Physical properties of Earth and the processes associated with its existence as inferred from astronomy, geodesy, seismology, geology, terrestrial magnetism and thermal evolution.	
Teaching Dept.	0289 : Earth & Planetary Sciences	
Administering Faculty/Unit	SC : Faculty of Science	
Prerequisites	Prerequisite: MATH 222	Prerequisite: MATH133 and MATH222 or their equivalent. Web Registration Blocked? : N
Corequisites		
Restrictions		
Supplementary	1. Fall	

Calendar Info	2. 3 hours lectures	
Additional Course Charges		
Campus		
Projected Enrollment		
Requires Resources Not Currently Available		
Explanation for Required Resources		
Consultation Reports Attached?		
Effective Term of Implementation		201409
File Attachments		No attachments have been saved yet.
To be completed by the Faculty		
For Continuing Studies Use		

Approvals Summary

Show all comments

Version No.	Departmental Curriculum Committee	Departmental Meeting	Departmental Chair	Other Faculty	Curric/Academic Committee	Faculty	SCTP	Version Status
2								Submitted to Curriculum/Academic Committee for approval Edited by: Josie D'Amico on: Sep 26 2013
1								Submitted to Curriculum/Academic Committee for approval Created on: Aug 12 2013

Revision for EPSC 350

Proposal Reference Number	: 6768
PRN Alias	: 13-14#181
Version No	: 4
Submitted By	: Ms Kristy Thornton
Edited By	: Ms Josie D'Amico

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Summary of Changes	Prerequisites

	Current Data	New Data
Program Affected?		N
Program Change Form Submitted?		
Subject/Course/Term	EPSC 350 • one term	
Credit Weight or CEU's	3 credits.	
Course Activities	• A - Lecture	
Course Title	Course Title on Transcript: Tectonics Course Title on Calendar: Tectonics.	
Rationale		The pre-requisite MATH222 is already specified in the description of EPSC320, itself pre-requisite for this course.
Responsible Instructor		
Course Description	Rheology of the Earth, mechanics of the crust and mantle and core, convection in the mantle, evolution and kinematics and deformations of the oceanic and continental plates, thermal evolution of the Earth, the unifying theory of plate tectonics.	
Teaching Dept.	0289 : Earth & Planetary Sciences	
Administering Faculty/Unit	SC : Faculty of Science	
Prerequisites	Prerequisites: EPSC 320, Calculus 3 or equivalent	Prerequisites: EPSC320 Web Registration Blocked? : N
Corequisites		
Restrictions		
Supplementary Calendar Info	1. Winter 2. 3 hours lectures	
Additional Course		

Charges		
Campus		
Projected Enrollment		
Requires Resources Not Currently Available		
Explanation for Required Resources		
Consultation Reports Attached?		
Effective Term of Implementation		201501
File Attachments		No attachments have been saved yet.
To be completed by the Faculty		
For Continuing Studies Use		

Approvals Summary

Show all comments

Version No.	Departmental Curriculum Committee	Departmental Meeting	Departmental Chair	Other Faculty	Curric/Academic Committee	Faculty	SCTP	Version Status
4								Submitted to Curriculum/Academic Committee for approval Edited by: Josie D'Amico on: Sep 26 2013
3								Submitted to Curriculum/Academic Committee for approval Edited by: Josie D'Amico on: Sep 18 2013
2								Submitted to Curriculum/Academic Committee for approval Edited by: Jeanne Paquette on: Sep 18 2013
1								Submitted to Curriculum/Academic Committee for approval Created on: Aug 12

								2013

Revision for EPSC 482, 482D1/D2

Proposal Reference Number	: 6818
PRN Alias	: 13-14#231
Version No	: 4
Submitted By	: Ms Kristy Thornton
Edited By	: Ms Josie D'Amico

Display Printable PDF

Summary of Changes	Course Title, Course Description, Supplementary Calendar Info

	Current Data	New Data
Program Affected?		N
Program Change Form Submitted?		
Subject/Course/Term	EPSC 482 • one term • two consecutive terms (D1, D2)	
Credit Weight or CEU's	1. 482 = 3 credits. 2. 482D1 = 1.5 credits. 3. 482D2 = 1.5 credits.	
Course Activities	• P - Project	
Course Title	Course Title on Transcript: Independent Studies 1 Course Title on Calendar: Independent Studies 1.	Course Title on Transcript: Res in Earth & Planetary Sci Course Title on Calendar: Research in Earth & Planetary Sciences
Rationale		This opportunity to undertake a research project at the undergraduate level is offered every semester to students who identify a willing supervisor. This revision clarifies the deadline for approval of such research projects and focusses its purpose as an undergraduate research course. The course gives our students the opportunity of hands-on experience in scientific research complementary to EPSC396. This change has no impact on our undergraduate programs because the course is neither required nor is it included in our complementary course list. Also, the reading component has been removed from the course description, and the course title has been changed to reflect the changes.
Responsible Instructor		
Course Description	Research and/or reading project in Earth and Planetary Sciences, designed by the student in consultation with a Faculty supervisor. A statement of the proposed project and the	Research project designed by a student in consultation with a departmental faculty member of Earth & Planetary Sciences.

	method of evaluation must be approved by the Director of Undergraduate studies before October 15. This statement will be included in the student's file.	
Teaching Dept.	0289 : Earth & Planetary Sciences	
Administering Faculty/Unit	SC : Faculty of Science	
Prerequisites		
Corequisites		
Restrictions		
Supplementary Calendar Info	1. Fall 2. Students must register for both EPSC 482D1 and EPSC 482D2 3. No credit will be given for this course unless both EPSC 482D1 and EPSC 482D2 are successfully completed in consecutive terms 4. EPSC 482D1 and EPSC 482D2 together are equivalent to EPSC 482	1. Fall 2. A statement of the proposed project and method of evaluation, signed by the student and supervisor, must be submitted to the departmental Director of Undergraduate Studies for approval by the add/drop deadline of the semester in which the student registers for this course. Students must register for both EPSC 482D1 and EPSC 482D2. 3. No credit will be given for this course unless both EPSC 482D1 and EPSC 482D2 are successfully completed in consecutive terms 4. EPSC 482D1 and EPSC 482D2 together are equivalent to EPSC 482
Additional Course Charges		
Campus		
Projected Enrollment		
Requires Resources Not Currently Available		
Explanation for Required Resources		
Consultation Reports Attached?		
Effective Term of Implementation		201409
File Attachments		No attachments have been saved yet.
To be completed by the Faculty		
For Continuing Studies Use		

Approvals Summary

Show all comments

Version No.	Departmental Curriculum Committee	Departmental Meeting	Departmental Chair	Other Faculty	Curric/Academic Committee	Faculty	SCTP	Version Status
4								Submitted to Curriculum/Academic Committee for approval Edited by: Josie D'Amico on: Sep 20 2013
3								Submitted to Curriculum/Academic Committee for approval Edited by: Josie D'Amico on: Sep 18 2013
2								Submitted to Curriculum/Academic Committee for approval Edited by: Jeanne Paquette on: Sep 18 2013
1								Submitted to Curriculum/Academic Committee for approval Created on: Aug 14 2013

Revision for EPSC 561

Proposal Reference Number	: 6839
PRN Alias	: 13-14#252
Version No	: 2
Submitted By	: Ms Kristy Thornton
Edited By	: Ms Josie D'Amico

Display Printable PDF

Summary of Changes	Course Title

	Current Data	New Data
Program Affected?		N
Program Change Form Submitted?		
Subject/Course/Term	EPSC 561 • one term	
Credit Weight or CEU's	3 credits.	
Course Activities	• M - Seminar	
Course Title	Course Title on Transcript: Ore-forming Processes 1 Course Title on Calendar: Ore-forming Processes 1.	Course Title on Transcript: Ore-forming Processes Course Title on Calendar: Ore-forming Processes.
Rationale		The course EPSC562 (Ore-forming Processes 2) has not been taught in several years and is no longer needed, so it is being retired (PRN 6838). The course EPSC561 meets the need of our programs but the numeral in its title is now superfluous.
Responsible Instructor		
Course Description	Physicochemical 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.	
Teaching Dept.	0289 : Earth & Planetary Sciences	
Administering Faculty/Unit	SC : Faculty of Science	
Prerequisites	Prerequisite: One course in ore petrology (EPSC 451 or EPSC 452) or equivalent, or permission of instructor	
Corequisites		

Restrictions		
Supplementary Calendar Info	1. Winter 2. 3 hours seminar	
Additional Course Charges		
Campus		
Projected Enrollment		
Requires Resources Not Currently Available		
Explanation for Required Resources		
Consultation Reports Attached?		
Effective Term of Implementation		201409
File Attachments		No attachments have been saved yet.
To be completed by the Faculty		
For Continuing Studies Use		

Approvals Summary

Show all comments

Version No.	Departmental Curriculum Committee	Departmental Meeting	Departmental Chair	Other Faculty	Curric/Academic Committee	Faculty	SCTP	Version Status
2								Submitted to Curriculum/Academic Committee for approval Edited by: Josie D'Amico on: Sep 26 2013
1								Submitted to Curriculum/Academic Committee for approval Created on: Aug 19 2013

Course Retire for EPSC 562

Proposal Reference Number	: 6838
PRN Alias	: 13-14#251
Version No	: 2
Submitted By	: Ms Kristy Thornton

Display Printable PDF

	Course to Retire
Program Affected?	Y
Program Change Form Submitted?	N (Simple Change) - Please remove this course from the list of Complementary Courses for the following programs: - Bachelor of Science (B.Sc.) - Liberal Program - Core Science Component Earth and Planetary Sciences -Bachelor of Science (B.Sc.) - Major Earth and Planetary Sciences - Bachelor of Science (B.Sc.) - Honours Earth Sciences - Bachelor of Science (B.Sc.) - Honours Planetary Sciences
Subject/Course/Term	EPSC 562 • one term
Credit Weight or CEU's	3 credits.
Course Activities	• M - Seminar
Course Title	Course Title on Transcript: Ore-forming Processes 2 Course Title on Calendar: Ore-forming Processes 2.
Rationale	The course EPSC562 has not been taught in several years and is no longer needed. The course EPSC561 meets the need of our programs but the numeral in its title is now superfluous.
Course Description	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.
Teaching Dept.	0289 : Earth & Planetary Sciences
Administering Faculty/Unit	SC : Faculty of Science
Prerequisites	Prerequisite: One course in mineral deposits (EPSC 451 or EPSC 452) or equivalent, or permission of the instructor.
Corequisites	
Restrictions	
Supplementary Calendar Info	1. Winter 2. 3 hours seminar
Consultation Reports Attached?	
Effective Term of	201401

Implementation	
File Attachments	No attachments have been saved yet.
To be completed by the Faculty	
For Continuing Studies Use	

Approvals Summary

Show all comments

Version No.	Departmental Curriculum Committee	Departmental Meeting	Departmental Chair	Other Faculty	Curric/Academic Committee	Faculty	SCTP	Version Status
2								Submitted to Curriculum/Academic Committee for approval Edited by: Kristy Thornton on: Sep 17 2013
1								Submitted to Curriculum/Academic Committee for approval Created on: Aug 19 2013

McGill

Program/Major or Minor/Concentration Revision Form

(07/2004)

1.0 Degree Title
Specify the two degrees for concurrent degree programs

1.1 Major (Legacy= Subject) (30-char. max.)

1.2 Concentration (Legacy = Concentration/Option)
If applicable (30 char. max.)

1.3 Minor (with Concentration, if applicable)
(30 char. max.)

Education for Science Students

1.4 Category

- ☐ Faculty Program (FP)
- ☐ Major
- ☐ Joint Major
- ☐ Major Concentration (CON)
- ☒ Minor
- ☐ Minor Concentration (CON)
- ☐ Honours (HON)
- ☐ Joint Honours Component (HC)
- ☐ Internship/Co-op
- ☐ Thesis (T)
- ☐ Non-Thesis (N)
- ☐ Other

Please specify

1.5 Complete Program Title

Minor Education for Science Students

2.0 Administering Faculty/Unit

Science

Offering Faculty/Department

Education/Dean's Office

3.0 Effective Term of revision or retirement
Please give reasons in 5.0"Rationale" in the case of retirement
(Ex. Sept. 2004 = 200409)

☐ Retirement

Term: 201309

4.0 Existing Credit Weight: 18

Proposed Credit Weight: 18

5.0 Rationale for revised program

Program change is being submitted to reflect addition of one complementary course (EDPI 341) and removal of one complementary course (EDPI 309). Course content in both courses has been updated and EDPI 309 will cover topics at a more advanced level than introduced in EDPI 341. EDPI 341 is now a more suitable course this population.

6.0 Revised Program Description (Maximum 150 words)

No changes.

7.0 List of existing program and proposed program

Existing program (list courses as follows: Subj Code/Crse Num, Title, Credit weight, under the headings of: Required Courses, Complementary Courses, Elective Courses)	Proposed program (list courses as follows: Subj Code/Crse Num, Title, Credit weight, under the headings of: Required Courses, Complementary Courses, Elective Courses)
Required Course (3 credits) EDPE 300 Educational Psychology (3 credits) Complementary Courses (15 credits) 9 credits selected from: One of: EDEC 233 First Nations and Inuit Education (3 credits) EDEC 248 Multicultural Education (3 credits) EDEC 249 Global Education and Social Justice (3 credits) One of: EDEC 260 Philosophical Foundations (3 credits) EDEC 261 Philosophy of Catholic Education (3 credits) One of: EDEC 247 Policy Issues in Quebec Education (3 credits) EDEM 220 Contemporary Issues in Education (3 credits) 6 credits from the list below: * Note: Students select either EDES 335 or EDES 353. EDEC 262 Media, Technology and Education (3 credits) EDES 335 Teaching Secondary Science 1 (3 credits) * EDES 353 Teaching Secondary Mathematics 1 (3 credits) * EDPE 304 Measurement and Evaluation (3 credits) ~~EDPI 309 Exceptional Students (3 credits)~~	Required Course (3 credits) EDPE 300 Educational Psychology (3 credits) Complementary Courses (15 credits) 9 credits selected from: One of: EDEC 233 First Nations and Inuit Education (3 credits) EDEC 248 Multicultural Education (3 credits) EDEC 249 Global Education and Social Justice (3 credits) One of: EDEC 260 Philosophical Foundations (3 credits) EDEC 261 Philosophy of Catholic Education (3 credits) One of: EDEC 247 Policy Issues in Quebec Education (3 credits) EDEM 220 Contemporary Issues in Education (3 credits) 6 credits from the list below: * Note: Students select either EDES 335 or EDES 353. EDEC 262 Media, Technology and Education (3 credits) EDES 335 Teaching Secondary Science 1 (3 credits) * EDES 353 Teaching Secondary Mathematics 1 (3 credits) * EDPE 304 Measurement and Evaluation (3 credits) EDPI 341 Instruction in Inclusive Schools (3 credits)

Attach extra page(s) as needed

8.0 Consultation with Related Units ☐ Yes ☐ No

Financial Consult ☐ Yes ☐ No

Attach list of consultations

9. Approvals

Routing Sequence	Name	Signature	Date
Department	Jeffrey Derevensky, Interim Chair		3 May 3
Curric/Acad Committee			
Faculty 1	E. WOOD, Associate Dean		3 May 03
Faculty 2			
Faculty 3			
SCTP			
GS			
APPC			
Senate			

Submitted by

Name	Vanessa Bridgman/Joan Barrett
Phone	398-7040/398-8269
Email	vanessa.bridgman@mcgill.ca
Submission Date	

To be completed by ARR:

CIP Code

McGill University

Instruction in Inclusive schools
EDPI 341
Fall 2013

Lecturer: Gus Appignanesi

Sections: 4 and 5

Office: Education Room 533

Office Hours: By Appointment

Classroom Location: Arts W 215

Class Hours: M/W 10:05-11:25

Lecturer e-mail: gus.appignanesi@mcgill.ca

Textbook: *The differentiated classroom: Responding to the needs of all learners*.
Carol Ann Tomlinson (1999).

Readings: Certain readings will be uploaded as the course develops in MyCourses EDPI – 341.

Course Description: Developing, planning, implementing and evaluating effective learning programs for all students. Adapting curriculum and instruction for learners with varying abilities, learning styles, and needs. Collaboration with students, families, and other educators (or stakeholders) in the instructional process. Application of adaptations at the classroom and school level for all students in inclusive schools.

Objectives: This course is designed to introduce concepts and theories associated with the best practices in inclusive education and to offer opportunities to demonstrate these skills. Topics include planning, implementing and evaluating curriculum for students with diverse needs in inclusive classrooms. Today's classrooms are interdependent systems with all students benefitting from and contributing to that system. The course will focus on theoretical frameworks and specific teaching and learning strategies that enable all students to thrive within the classroom as an ecosystem.

Method: This course will try to simulate the spirit and design of the inclusive differentiated classroom. This approach will incorporate lectures, readings, large group discussions, small group discussions, interactive activities, homework assignments, projects and dialogue.

The MELS Professional Teaching Competencies:
(Course Learning Outcomes)

This course will address all twelve professional competencies prescribed by the MELS that are interdependent and interactive. The following six competencies, however, will be primarily addressed, developed and assessed in this course.

Competency 1: ***To act as a professional inheritor, critic and interpreter of knowledge or culture when teaching students.***

Competency 2: ***To communicate clearly in the language of instruction, both orally and in writing using correct grammar, in various contexts related to teaching.***

Competency 3: ***To develop teaching/learning situations that are appropriate to the students concerned and the subject content with a view to developing the competencies targeted in the programs of study.***

Competency 5: ***To evaluate student progress in learning the subject content and mastering the related competencies.***

Competency 7: To adapt his or her teaching to the needs and characteristics of students with learning disabilities, social maladjustments or handicaps.

Competency 10: ***To cooperate with members of the teaching team in carrying out tasks involving the development and evaluation of the competencies targeted in the programs of study, taking into account the students concerned.***

These professional competencies and developmental outcomes are based on:

(a) Active participation in small and large group discussions around critical questions generated to facilitate critical thinking about readings and class activities;

(b) Conveying a personal professional understanding of various theoretical and practical implications of teaching and learning;

(c) Developing a clear, concise and practical philosophy and understanding of inclusive education.

Code of Conduct and Professionalism

Attendance is compulsory in this course. Attendance will be taken on a regular but random schedule. Unexplained absence for more than four classes may result in the awarding of a "J" (absent) grade for this course.

Absence due to religious observance is covered by the Code of Student Rights and responsibilities. Such absences are to be reported to the professor according to the procedures outlined in the Code.
Punctuality is also important, so please come to class on time. Repetitions of unexcused tardiness will treated as an absence.

There is a growing concern among professors and students over significant lapses in classroom etiquette (e.g. incessant chatting, recurring lateness, repeatedly walking in and out of class, use of technology in disruptive ways). It is important to note that students of the Faculty of Education are to be future professionals. They need to act accordingly in this class as they would expect their students to act in their classroom. Even students that are taking this course as an elective or Minor in Education need to act accordingly.

As stated in the McGill Student Rights and Responsibilities Handbook (2006), "disruption which occurs during the teaching of a course may be treated as an academic offence under the provisions of Article 19."

Furthermore, mobile phones are never to ring, vibrate or be used in any way in class. Do not use your laptop unless asked to do so for a specific purpose in class. Students with specific learning needs may use computers as a learning accommodation when required.

Additional Policies and Procedures

1) *"McGill University values academic integrity. Therefore, all students must understand the meaning and consequences of cheating, plagiarism and other academic offences under the Code of Student Conduct and Disciplinary Procedures (see http://www.mcgill.ca/integrity for more information)."*

2) *"If you have a disability please contact the instructor to arrange a time to discuss your situation. It would be helpful if you contact the Office for Students with Disabilities at 398-6009 or online at http://www.mcgill.ca/osd) before you do this."*

3) *"Additional policies governing academic issues which affect students can be found in the Handbook on Student Rights and Responsibilities, Charter of Students' Rights (online at http://www.mcgill.ca/files/secretariat/greenbookenglish.pdf).*"

4) *"In accord with McGill University's Charter of Students' Rights, students in this course have the right to submit in English or in French any written work that is to be graded."*

5) *MERCURY ONLINE EVALUATIONS: Students are strongly encouraged to fill out the online evaluation for this course at the end of term. Online course evaluations serve primarily as a tool towards teaching improvement, informing students about courses, and as one of the elements for evaluating the teaching performance of staff for reappointment, tenure and promotion purposes. For more information consult t he following link: http://www.mcgill.ca/tls/courseevaluations/mercury*

Course Outline and Objectives

Weeks 1 and 2

The first group of lectures is dedicated to the understanding of the overall course;

a. Review of course outline
b. Formation of groups
c. Evaluation of the course through individual and group work
d. What is Inclusive Education?
e. A 'walk' through the history of inclusive education (early history, the grassroots movement of the 60s, influential research by Dunn, mainstreaming, integration, inclusive education and RtI)

Weekly Assignment 1

Week 3

Introduction: the classroom as an ecosystem

a. Today's classrooms are interdependent systems with all students benefitting from and contributing to that system. The course will focus on theoretical frameworks and specific teaching and learning strategies that enable all students to thrive within the classroom as an ecosystem.
b. Uri Bronfenbrenner's theory
c. The changing role of the classroom teacher within the inclusive classroom model
d. The Quebec Education Program and implications for learners with disabilities e.g. Early intervention, problem based learning
e. Review – historical perspective of inclusive education
f. Universal design as a foundation for curriculum development in the inclusive classroom

Weekly Assignment 2

Week 4

a. Assessments in planning your inclusive classroom
b. When to IEP and when not to
c. Curriculum adaptations
d. Differentiation

Weekly Assignment 3

Week 5

Response to Intervention: Understanding the holistic nature of meeting student needs

a. Guiding principles of RtI
b. What are the three tiers of learning?
c. Implications of a three tiered model on school resources (technicians, teacher assistants, psychologists, special education resource teachers)
d. Research based best practices in teaching and learning
e. Universal screening – data collection (Dibels and other tools)

Curriculum based assessment – progress monitoring and dynamic assessment (Vygotsky, Feuerstein) – Zone of proximal development and task analysis (breaking down a task and creating a sequence according to level of complexity e.g. Bloom's revised taxonomy) as a means of meeting diverse needs along the continuum.

Weekly Assignment 4

Week 6

Understanding by Design: a model for developing inclusive unit plans for all learners

a. KUD – big ideas for all learners
b. Assessment – assessment for and of learning (ongoing and summative), authentic assessment, differentiated assessments (Choices, RAFT)
c. Learning strategies – use of learning styles, multiple intelligences, choices, learning readiness, interest, affective domains)

Quiz Number one – Wednesday October 9th

Weekly Assignment 5

Week 7

Differentiated Instruction – Tiers 1, 2 and 3

Best practices for all learners

a. The important role of school leadership in creating differentiated learning
b. Differentiating process, product and content – overview
c. Pre-assessment, entry points, ongoing assessment, tiered learning, learning styles, multiple intelligences
d. Strategies for the inclusive classroom: collaborative learning, tic tac toe choice boards, graphic organizers, compacting, cubing, literature circles
e. Remedial strategies
f. Developing a differentiated unit plan using UbD

Weekly Assignment 6

Week 8

Evidence based teaching and the emotionally supportive classroom

a. Creating the brain friendly classroom
b. Research on the brain and learning
c. The emotionally safe class and strategies to enhance safety in the classroom
d. Relaxed alertness

Weekly Assignment 7

Week 9

Developing the IEP

a. SMART goals
b. Alignment between goals and strategies
c. Effective strategies for specific learners
d. Task analysis of curriculum suitable to readiness level of the student
e. Writing the IEP

Weekly Assignment 8

Week 10

Managing the inclusive classroom: Teacher as facilitator

a. Active learning
b. Effective strategies to manage diverse learning (good chaos)

Weekly Assignment 9

Weeks 11 and 12

Presentations and critiques of differentiated unit plans; IEP's, lesson plans, etc.

Weekly Assignment 10

Week 13

Bringing it all together – review
Second Quiz – Wednesday November 27th

Evaluation Procedure

1. Welcome Letter and Inclusion Philosophy (Total 15%)

Part I – Letter (5%)

Write a brief information letter to the parents of your students (one page). This letter should welcome the parents into the inclusive learning community that you hope to create for all your students. Indicate in your letter the age group that you will be teaching & provide a welcoming message to parents. Describe how you will be creating **an environment that is inclusive** and incorporates diversity in its many forms. Indicate in your letter that a separate **description and philosophy** of your inclusive classroom will be attached with this letter. This description will relay how your values will be demonstrated in your teaching within an inclusive differentiated classroom.

Part II – Inclusion Philosophy (10%)

Write your inclusion philosophy (2 pages). The purpose of this document is to help you to solidify your values **regarding inclusion** and to relay how these values will be manifested in your classroom. Describe in detail your policy for a classroom that addresses the numerous types diversity, using concrete examples.

Evaluation Criteria: Writing Style (clear, concise & cohesive, 5/15), **Comprehensiveness** (5/15) and **Acceptability** 5/15)

Due date: Wednesday October 9, 2013

2. <u>Differentiated Unit Plan</u> (Total 20%)

You will be asked to develop a differentiated unit plan. You will focus on **two (2) lessons** within the unit using the Quebec competencies. You will need to apply the principles that have been covered in class. The two detailed lessons you will provide will be differentiated by:

(a) Readiness, interest or learning profile.
(b) Flow of instruction that includes whole class discussions, group work, paired work and individual work.
(c) Teacher's role as classroom facilitator must be clearly indicated.
(d) Use KUD (Knowledge, Understanding and Doing) into your lesson plans.
(e) You need to write your lesson plan clear and detailed so anyone could walk in and teach the lesson.
(f) The Unit Plan must show evidence of using theories discussed in class and from your readings.

Evaluation Criteria: A lesson format will be provided through MyCourses with a point breakdown out of 20 points.

Due date: Monday November 4, 2013

3. <u>I.E.P. activity</u> (Total 15%)

All information needed to complete the activity will be provided in class and on MyCourses. You will be able to begin and work on the activities in class. Your group will read, consult, comment, and critique the assignment for another group in an educated and professional manner and they will do the same with your group's assignment. You will return your assignments to each other and discuss your findings. A larger class discussion will follow to share what was learned from each other. This is an in class activity and needs to be completed in class. Your group will also critique the IEP of other groups. The critique will be worth 2 points toward your class participation grade. Both the critique and the IEP will be completed during class. If you are not in class on the designated day you cannot get any points for the activity.

Evaluation Criteria: You will be given all information that you need the day of the assignment and the IEP format will have a point breakdown of the assignment

Due Date: Wednesday, November 20th

4. <u>Homework Assignments</u> (Total 20%)

Evaluation Criteria: The weekly assignments are designed as a combination of pre-reviewing and reviewing the weekly class presentations and lectures. Two points are given per assignment. More information will be supplied during the lecture, as each assignment is posted.

5. Class Attendance and Participation (Total 15%)

Participation and attendance are a crucial aspect of this course. Attendance will recorded on a random basis, so please try to attend all classes. There will be a **3 percent** penalty per absence for a total of 15 percent. The only exceptions are verified medical, religious or specially approved absences from the lecturer.

6. In-Class Quizzes (Total 15%)

There will be two review quizzes. Each is worth 7.5%. Quizzes are on October 9th and November 27th, respectfully. The quizzes will be a mixture of multiple choice questions and short essay answers. Each quiz will cover the material preceding each quiz.

Please note: *The* ***same group or team*** *works together throughout the semester on any group work. It is the responsibility of each member of the group to be responsible for delegating work, sharing work and completing the necessary work. One member however should be elected as the "coordinator" and be responsible for submitting the work hard copies and e-mails to class). Each group member will receive the same grade on the projects and presentation. If there are any extenuating circumstances in a group you need to come and see me as soon as they arise.*

Program/Major or Minor/Concentration Revision Form

(07/2004)

1.0 Degree Title
Specify the two degrees for concurrent degree programs

M.Sc.

1.2 Concentration (Legacy = Concentration/Option)
If applicable (30 char. max.)

1.3 Minor (with Concentration, if applicable)
(30 char. max.)

1.4 Category

Faculty Program (FP)	Honours (HON)
Major	Joint Honours Component (HC)
Joint Major	Internship/Co-op
Major Concentration (CON)	Thesis (T)
Minor	Non-Thesis (N)
Minor Concentration (CON)	Other
	Please specify

1.5

Master of Science (M.Sc.); Earth and Planetary Sciences

2.0 Administering Faculty/Unit

Graduate and Post-doctoral Studies

Offering Faculty/Department

Earth and Planetary Sciences

3.0 Effective Term of revision or retirement
Please give reasons in 5.0 "Rationale" in the case of retirement
(Ex. Sept. 2004 = 200409) Retirement

Term: 201409

4.0 Existing Credit Weight: 45

Proposed Credit Weight: 45

5.0 Rationale for revised program

We no longer wish to require M.Sc. students to take EPSC 666 (Current Issues in Geosciences) because we have found that the goal of this course is better served by students attending departmental seminars by outside speakers whose areas of knowledge often extend to other subdisciplines of geoscience beyond those within the department, thus giving the students a better introduction to current issues in geoscience. The complementary courses have been raised accordingly.

6.0 Revised Program Description (Maximum 150 words)

No change from what is currently written in the graduate calendar.

7.0 List of existing program and proposed program

Existing program (list courses as follows: Subj Code/Crse Num, Title, Credit weight, under the headings of: Required Courses, Complementary Courses, Elective Courses)	Proposed program (list courses as follows: Subj Code/Crse Num, Title, Credit weight, under the headings of: Required Courses, Complementary Courses, Elective Courses)
29.11.5.5 Master of Science (M.Sc.); Earth and Planetary Sciences (Thesis) (45 credits) Thesis Courses (33 credits) EPSC 697 (9) Thesis Preparation 1 EPSC 698 (12) Thesis Preparation 2 EPSC 699 (12) Thesis Preparation 3 Required Course (3 credits) **EPSC 666 (3) Current Issues in Geosciences** Complementary Courses (**9 credits**) **Three** 3-credit 500-, 600-, or 700-level EPSC courses chosen with the approval of the supervisor or the research director and GPS.	29.11.5.5 Master of Science (M.Sc.); Earth and Planetary Sciences (Thesis) (45 credits) Thesis Courses (33 credits) EPSC 697 (9) Thesis Preparation 1 EPSC 698 (12) Thesis Preparation 2 EPSC 699 (12) Thesis Preparation 3 Complementary Courses (**12 credits**) **Four** 3-credit 500-, 600-, or 700-level EPSC courses chosen with the approval of the supervisor or the research director and GPS.

Attach extra page(s) as needed

8.0 Consultation with Related Units ☐ Yes ☐ No

Financial Consult ☐ Yes ☐ No

Attach list of consultations

9. Approvals

Routing Sequence	Name	Signature	Date
Department			
Curric/Acad Committee			
Faculty 1			
Faculty 2			
Faculty 3			
SCTP			
GS			
APPC			
Senate			

Submitted by

Name	
Phone	
Email	
Submission Date	

To be completed by ARR:

CIP Code

Program/Major or Minor/Concentration Revision Form

(07/2004)

1.0 Degree Title
Specify the two degrees for concurrent degree programs

M.Sc.

1.2 Concentration (Legacy = Concentration/Option)
If applicable (30 char. max.)

1.3 Minor (with Concentration, if applicable)
(30 char. max.)

1.4 Category

Faculty Program (FP)	Honours (HON)
Major	Joint Honours Component (HC)
Joint Major	Internship/Co-op
Major Concentration (CON)	Thesis (T)
Minor	Non-Thesis (N)
Minor Concentration (CON)	Other
	Please specify

1.5

Master of Science (M.Sc.); Earth and Planetary Sciences (Thesis) — Environment

2.0 Administering Faculty/Unit

Graduate and Post-doctoral Studies

Offering Faculty/Department

Earth and Planetary Sciences

3.0 Effective Term of revision or retirement
Please give reasons in 5.0 "Rationale" in the case of retirement
(Ex. Sept. 2004 = 200409) Retirement

Term: 201409

4.0 Existing Credit Weight: 48

Proposed Credit Weight: 48

5.0 Rationale for revised program

We no longer wish to require M.Sc. students to take EPSC 666 (Current Issues in Geosciences) because we have found that the goal of this course is better served by students attending departmental seminars by outside speakers whose areas of knowledge often extend to other subdisciplines of geoscience beyond those within the department, thus giving the students a better introduction to current issues in geoscience. The complementary courses have been raised accordingly.

6.0 Revised Program Description (Maximum 150 words)

No change from what is currently written in the graduate calendar.

7.0 List of existing program and proposed program

Existing program (list courses as follows: Subj Code/Crse Num, Title, Credit weight, under the headings of: Required Courses, Complementary Courses, Elective Courses)	Proposed program (list courses as follows: Subj Code/Crse Num, Title, Credit weight, under the headings of: Required Courses, Complementary Courses, Elective Courses)
29.11.5.6 Master of Science (M.Sc.); Earth and Planetary Sciences (Thesis) — Environment (48 credits) Thesis Courses (33 credits) EPSC 697 (9) Thesis Preparation 1 EPSC 698 (12) Thesis Preparation 2 EPSC 699 (12) Thesis Preparation 3 Required Courses (9 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 **EPSC 666 (3) Current Issues in Geosciences** Complementary Courses (6 credits) **One** 3-credit course at the 500, 600, or 700 level chosen with the approval of the supervisor or research director and GPS. 3 credits chosen from 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 ENVR 680 (3) Topics in Environment 4 or another course at the 500, 600, or 700 level recommended by the advisory committee and approved by the Environment Option Committee.	29.11.5.6 Master of Science (M.Sc.); Earth and Planetary Sciences (Thesis) — Environment (48 credits) Thesis Courses (33 credits) EPSC 697 (9) Thesis Preparation 1 EPSC 698 (12) Thesis Preparation 2 EPSC 699 (12) Thesis Preparation 3 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 (9 credits) **Two** 3-credit course at the 500, 600, or 700 level chosen with the approval of the supervisor or research director and GPS. 3 credits chosen from 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 ENVR 680 (3) Topics in Environment 4 or another course at the 500, 600, or 700 level recommended by the advisory committee and approved by the Environment Option Committee.

Attach extra page(s) as needed

8.0 Consultation with Related Units ☐ Yes ☐ No

Financial Consult ☐ Yes ☐ No

Attach list of consultations

9. Approvals

Routing Sequence	Name	Signature	Date
Department			
Curric/Acad Committee			
Faculty 1			
Faculty 2			
Faculty 3			
SCTP			
GS			
APPC			
Senate			

Submitted by

Name	
Phone	
Email	
Submission Date	

To be completed by ARR:

CIP Code

Program/Major or Minor/Concentration Revision Form

(07/2004)

1.0 Degree Title
Specify the two degrees for concurrent degree programs

1. Ph.D.

1.2 Concentration (Legacy = Concentration/Option)
If applicable (30 char. max.)

1.3 Minor (with Concentration, if applicable)
(30 char. max.)

1.4 Category

Faculty Program (FP)	Honours (HON)
Major	Joint Honours Component (HC)
Joint Major	Internship/Co-op
Major Concentration (CON)	Thesis (T)
Minor	Non-Thesis (N)
Minor Concentration (CON)	Other
	Please specify

1.5 Doctor of Philosophy (Ph.D.); Earth and Planetary Sciences

2.0 Administering Faculty/Unit

Graduate and Postdoctoral Studies

Offering Faculty/Department

Earth and Planetary Sciences

3.0 Effective Term of revision or retirement
Please give reasons in 5.0 "Rationale" in the case of retirement
(Ex. Sept. 2004 = 200409) Retirement

Term: 201409

4.0 Existing Credit Weight Proposed Credit Weight

5.0 Rationale for revised program

Two revisions are proposed for our Ph.D programs:

1. After much consideration we decided that requiring students entering in the Ph.D. program at year 1 (Ph.D.1) should only have to take the same number of course credits as the sum of course credits required for M.Sc. students, 12 credits, and students entering the Ph.D. program at year 2 (Ph.D.2), 6 credits, for a total of 18 credits. This revision balances the credit requirements for students entering at the Ph.D.1 level with those of students who obtain both an M.Sc. followed by a Ph.D. degree in our department.

2. We no longer wish to require Ph.D. students to take EPSC 666 (Current Issues in Geosciences) because we have found that the goal of this course is better served by students attending departmental seminars by outside speakers whose areas of knowledge often extend to other subdisciplines of geoscience beyond those within the department, thus giving the students a better introduction to current issues in geoscience. The complementary courses have been raised accordingly.

6.0 Revised Program Description (Maximum 150 words)

No change from what is currently written in the graduate calendar.

7.0 List of existing program and proposed program

Existing program (list courses as follows: Subj Code/Crse Num, Title, Credit weight, under the headings of: Required Courses, Complementary Courses, Elective Courses)	Proposed program (list courses as follows: Subj Code/Crse Num, Title, Credit weight, under the headings of: Required Courses, Complementary Courses, Elective Courses)
29.11.5.7 Doctor of Philosophy (Ph.D.); Earth and Planetary Sciences Highly qualified B.Sc. graduates may be admitted directly to the Ph.D. 1 year. Students with the M.Sc. degree are normally admitted to the Ph.D. 2 year. Students are required to take **six** graduate-level courses in the Ph.D. 1 year, and two courses plus a comprehensive oral examination in the Ph.D. 2 year. Thesis A thesis for the doctoral degree must constitute original scholarship and must be a distinct contribution to knowledge. It must show familiarity with previous work in the field and must demonstrate ability to plan and carry out research, organize results, and defend the approach and conclusions in a scholarly manner. The research presented must meet current standards of the discipline; as well, the thesis must clearly demonstrate how the research advances knowledge in the field. Finally, the thesis must be written in compliance with norms for academic and scholarly expression and for publication in the public domain. Required Courses **EPSC 666 (3) Current Issues in Geosciences** EPSC 700 (0) Preliminary Doctoral Examination Complementary Courses **One** to seven courses approved at the 500, 600, or 700 level selected in consultation with the student's supervisor and approved by the Academic Standing Committee.	29.11.5.7 Doctor of Philosophy (Ph.D.); Earth and Planetary Sciences Highly qualified B.Sc. graduates may be admitted directly to the Ph.D. 1 year. Students with the M.Sc. degree are normally admitted to the Ph.D. 2 year. *****Students are required to take **four** graduate-level courses (12 credits) in the Ph.D. 1 year, and two courses (6 credits) plus a comprehensive oral examination in the Ph.D. 2 year. Thesis A thesis for the doctoral degree must constitute original scholarship and must be a distinct contribution to knowledge. It must show familiarity with previous work in the field and must demonstrate ability to plan and carry out research, organize results, and defend the approach and conclusions in a scholarly manner. The research presented must meet current standards of the discipline; as well, the thesis must clearly demonstrate how the research advances knowledge in the field. Finally, the thesis must be written in compliance with norms for academic and scholarly expression and for publication in the public domain. Required Courses EPSC 700 (0) Preliminary Doctoral Examination Complementary Courses **Two** to six courses (6 to 18 credits)***** approved at the 500, 600, or 700 level selected in consultation with the student's supervisor and approved by the Academic Standing Committee.

Attach extra page(s) as needed

8.0 Consultation with Related Units ☐ Yes ☐ No

Financial Consult ☐ Yes ☐ No

Attach list of consultations

9. Approvals

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To be completed by ARR:

CIP Code

Program/Major or Minor/Concentration Revision Form

(07/2004)

1.0 Degree Title
Specify the two degrees for concurrent degree programs

1. Ph.D.

1.2 Concentration (Legacy = Concentration/Option)
If applicable (30 char. max.)

1.3 Minor (with Concentration, if applicable)
(30 char. max.)

1.4 Category

Faculty Program (FP)	Honours (HON)
Major	Joint Honours Component (HC)
Joint Major	Internship/Co-op
Major Concentration (CON)	Thesis (T)
Minor	Non-Thesis (N)
Minor Concentration (CON)	Other
	Please specify

1.5 Doctor of Philosophy (Ph.D.); Earth and Planetary Sciences — Environment

2.0 Administering Faculty/Unit

Graduate and Postdoctoral Studies

Offering Faculty/Department

Earth and Planetary Sciences

3.0 Effective Term of revision or retirement
Please give reasons in 5.0 "Rationale" in the case of retirement
(Ex. Sept. 2004 = 200409) Retirement

Term: 201409

4.0 Existing Credit Weight Proposed Credit Weight

5.0 Rationale for revised program

Two revisions are proposed for our Ph.D programs:

1. After much consideration we decided that requiring students entering in the Ph.D. program at year 1 (Ph.D.1) should only have to take the same number of course credits as the sum of course credits required for M.Sc. students, 12 credits, and students entering the Ph.D. program at year 2 (Ph.D.2), 6 credits, for a total of 18 credits. This revision balances the credit requirements for students entering at the Ph.D.1 level with those of students who obtain both an M.Sc. followed by a Ph.D. degree in our department.

2. We no longer wish to require Ph.D. students to take EPSC 666 (Current Issues in Geosciences) because we have found that the goal of this course is better served by students attending departmental seminars by outside speakers whose areas of knowledge often extend to other subdisciplines of geoscience beyond those within the department, thus giving the students a better introduction to current issues in geoscience. The complementary courses have been raised accordingly.

6.0 Revised Program Description (Maximum 150 words)

No change from what is currently written in the graduate calendar:

7.0 List of existing program and proposed program

Existing program (list courses as follows: Subj Code/Crse Num, Title, Credit weight, under the headings of: Required Courses, Complementary Courses, Elective Courses)	Proposed program (list courses as follows: Subj Code/Crse Num, Title, Credit weight, under the headings of: Required Courses, Complementary Courses, Elective Courses)
29.11.5.8 Doctor of Philosophy (Ph.D.); Earth and Planetary Sciences — Environment Thesis A thesis for the doctoral degree must constitute original scholarship and must be a distinct contribution to knowledge. It must show familiarity with previous work in the field and must demonstrate ability to plan and carry out research, organize results, and defend the approach and conclusions in a scholarly manner. The research presented must meet current standards of the discipline; as well, the thesis must clearly demonstrate how the research advances knowledge in the field. Finally, the thesis must be written in compliance with norms for academic and scholarly expression and for publication in the public domain. Required Courses 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 **EPSC 666 (3) Current Issues in Geosciences** EPSC 700 (0) Preliminary Doctoral Examination Complementary Courses One to **five** courses One course chosen from 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 ENVR 680 (3) Topics in Environment 4 or another course at the 500, 600, or 700 level recommended by the advisory committee with the student's supervisor and approved by the Academic Standing Committee. Zero to four courses at the 500, 600, or 700 level selected in consultation with the student's supervisor and approved by the Academic Standing Committee.	29.11.5.8 Doctor of Philosophy (Ph.D.); Earth and Planetary Sciences — Environment Highly qualified B.Sc. graduates may be admitted directly to the Ph.D. 1 year. Students with the M.Sc. degree are normally admitted to the Ph.D. 2 year. *Students are required to take four graduate-level courses (12 credits) in the Ph.D. 1 year, and two courses (6 credits) plus a comprehensive oral examination in the Ph.D. 2 year, as well as the Required Courses listed below. Thesis A thesis for the doctoral degree must constitute original scholarship and must be a distinct contribution to knowledge. It must show familiarity with previous work in the field and must demonstrate ability to plan and carry out research, organize results, and defend the approach and conclusions in a scholarly manner. The research presented must meet current standards of the discipline; as well, the thesis must clearly demonstrate how the research advances knowledge in the field. Finally, the thesis must be written in compliance with norms for academic and scholarly expression and for publication in the public domain. Required Courses 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 EPSC 700 (0) Preliminary Doctoral Examination Complementary Courses **Two** to **six** courses (6 to 18 credits)* One course chosen from 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 ENVR 680 (3) Topics in Environment 4 or another course at the 500, 600, or 700 level recommended by the advisory committee with the student's supervisor and approved by the Academic Standing Committee. One to five courses at the 500, 600, or 700 level selected in consultation with the student's supervisor and approved by the Academic Standing Committee.

Attach extra page(s) as needed

8.0 Consultation with Related Units ☐ Yes ☐ No

Financial Consult ☐ Yes ☐ No

Attach list of consultations

9. Approvals

Routing Sequence	Name	Signature	Date
Department			
Curric/Acad Committee			
Faculty 1			
Faculty 2			
Faculty 3			
SCTP			
GS			
APPC			
Senate			

Submitted by

Name	
Phone	
Email	
Submission Date	

To be completed by ARR:

CIP Code

QUALIFYING COURSES FOR THE DEAN'S MULTIDISCIPLINARY UNDERGRADUATE RESEARCH LIST

Members of the Academic Committee are invited to consider the list of courses that qualify for the Dean's Multidisciplinary Undergraduate Research List:

- For your reference, please review the additions from the last year.
- Are there any other new research courses currently being created or pending final approval?
- Considering the main list below of currently approved courses, are there any that ought to be removed?

Background: What is the Dean's Multidisciplinary Undergraduate Research List

This following information is provided to students both on the Office for Undergraduate Research in Science website at http://www.mcgill.ca/science/research/ours/dmurl and also in the Calendar at http://www.mcgill.ca/study/2013-2014/university_regulations_and_resources/undergraduate/ug_gi_graduation_honours_faculty_of_science_deans_multidisc_ug_research_list. It was revised in Spring/Summer 2013 when the DMURL was extended to B.A. & Sc. students

The Faculty of Science Dean's Multidisciplinary Undergraduate Research List recognizes Bachelor of Science (B.Sc.) and *(effective as of October 2013 graduation)* Bachelor of Arts and Science (B.A. & Sc.) students who have participated in substantial and broad undergraduate science research.

Eligibility

To be placed on the Faculty of Science Dean's Multidisciplinary Undergraduate Research List at graduation time, a student must:

- complete at least 9 credits of research-based courses, taken for a letter grade,
- where qualifying courses are either specified in the list of approved science research courses (http://www.mcgill.ca/science/research/ours/researchcourses and reproduced below),
- or are pre-approved by the Faculty of Science, for other undergraduate science research courses.

Furthermore, considering all qualifying science research-based courses on your transcript at graduation time:

- at least one course, worth at least 3 credits, must be from a different unit than the other research-based courses; and
- every qualifying course must have been completed with a grade of C or above; and
- the average GPA over all qualifying courses must be 3.0 or above.

If these requirements are met, the mention "Dean's Multidisciplinary Undergraduate Research List" will be recorded on the student's transcript at graduation time.

Application

No application is necessary for students who have taken courses from the approved list; all B.Sc. and B.A. & Sc. graduating students' records are considered by the Office for Undergraduate Research in Science.

In exceptional circumstances, if students have taken a science research course *not* already on the approved list, and wish for this course to be counted toward the Dean's Multidisciplinary Undergraduate Research List, they must apply. A qualifying course involves a science research project as its primary focus, culminating in a substantive written report. **Ineligible** courses include: reading courses; BASC 396 and BASC 449; and courses offered by the Faculty of Arts. For information on how to apply, students should contact the Office for Undergraduate Research in Science at least 4 months prior to graduation (e.g., February 1, for June graduation; July 1, for November graduation; August 1, for February graduation).

What is the list of approved research-based courses? How was it created and revised?

In 2005, members of the academic committee were asked to propose courses from their units which should be on this list. All courses involve a significant research component and a final written report or thesis. Reading courses were excluded. The list was reviewed and approved at the Academic Committee meeting of December 13, 2005. Since 2005, courses have been added by OURS in consultation with the Associate Dean (Academic), reflecting new course offerings (including three such courses added in 2012-13). The list was also reviewed with the Academic Committee in September 2009, September 2011, and September 2012. The current list is given below.

Recent changes:

- COGS 444: Added 2013-07
- ESYS 480: Added 2013-07
- HGEN 396: Added 2013-01

Are there any other courses that should be added to this list, as a result of courses created or modified? Or deletions?

About this list:

- In the event of *course name changes* since inception, this is noted in the comments field.
- *Some courses have been removed from this list* at the recommendation of the Associate Dean (Academic). They are listed in a separate table below. They have not been offered for several years, or they are currently offered as reading courses but have not been offered as research courses in several years.
- *Multi-semester courses* (suffix D1/D2, N1/N2) are denoted by “Span course” in the comments field.
- *Independent studies: research or reading?* There exist courses in which some students are given reading courses and other students are given research projects. When OURS reviews dossiers of candidates for graduation to determine their eligibility for DMURL, departmental validation is required to determine whether the course was taken as a reading project or a research project. *These courses are labeled with an asterisk (*) in the table below.*

Course	Title	Cr.	Comment	Research or reading?
AGRI 519	Sustainable Development Plans	6	Restricted to students in Barbados Field Study	

			Semester. Approved course for B.Sc. Environment majors. Added 2010/01/15	
ANAT 396	Undergraduate Research Project	3		
ANAT 432	Honours Research Project	9		
ATOC 396	Undergraduate Research Project	3		
ATOC 480	Honours Research Project	3		
BIOC 396	Undergraduate Research Project	3		
BIOC 462	Research Lab in Biochemistry	6	Added 2011-09	
BIOC 491	Independent Research	6		
BIOL 396	Undergraduate Research Project	3		
BIOL 451	Res. In Ecol&Develop in Africa	3	Added 2011-09	
BIOL 466	Independent Research Project 1	3		
BIOL 467	Independent Research Project 2	3		
BIOL 468	Independent Research Project 3	6		
BIOL 469	Independent Research Project 4	9	Was "Independent Studies 2"	
BIOL 479	Honours Research Project 1	9	Span course	
BIOL 480	Honours Research Project 2	12	Span course	
CHEM 396	Undergraduate Research Project	3		
CHEM 470	Research Project 1	6		
CHEM 480	Research Project 2	3		
CHEM 490	Research Project 3	3	Span course	
COGS 396	Undergraduate Research Project	3		
COGS 401	Research Cognitive Science 1	6		
COGS 402	Research Cognitive Science 2	6		
COGS 444	Honours Research	6	Added 2013-07	
COMP 396	Undergraduate Research Project	3		
COMP 400	Technical Project & Report	3		
COMP 401	Project in Biol. & Comp. Sci.	3		
ENVR 396	Undergraduate Research Project	3		
ENVR 401	Environmental Research	3		
ENVR 451	Research in Panama	6		
ENVR 490	Independ. Study in Environment	3		
ENVR 495	Honours Research	3	Span course	
EPSC 396	Undergraduate Research Project	3		
EPSC 480	Honours Research Project	3	Span course	
EPSC 482	Independent Studies 1	3		*
ESYS 480	Honours Research Project	6	Span course. Added 2013-07.	
GEOG 396	Undergraduate Research Project	3		
GEOG 451	Res. In Society & Dev in Africa	3	Added 2011-09	
GEOG 490	Geography: Independent Studies	3		*
GEOG 491	Honours Research	3	Span course	
GEOG 492	Joint Honours Research	3	Span course	

HGEN 396	Human Genetic Research Project	3	Added 2013-01
MATH 396	Undergraduate Research Project	3	
MATH 410	Majors Project	3	
MATH 470	Honours Research Project	3	
MIMM 396	Ugrad Research Proj-Microbiol	3	Was "Undergraduate research project" (Split Microbiol. from Immunol.)
MIMM 397	Ugrad Research Proj - Immunol	3	(Split Microbiol. from Immunol.)
MIMM 501	Hons Research Proj - Immunol	12	Span course (Split Microbiol. from Immunol.)
MIMM 502	Hons Research Proj - Microbiol	12	Span course. Was "Honours Research Project" (Split Microbiol. from Immunol.)
NSCI 396	Undergraduate Research Project	3	
NSCI 410	Independent Research 1	6	
NSCI 420	Independent Research 2	9	Span course
NSCI 430	Honours Research Project	9	Span course. Added 2013-07.
PHAR 599	Pharmacology Research Project	6	
PHGY 396	Undergraduate Research Project	3	
PHGY 419	Project&Seminar in Immunology	9	Span course
PHGY 461	Experimental Physiology	9	Span course
PHYS 396	Undergraduate Research Project	3	
PHYS 449	Majors Research Project	3	
PHYS 459	Honours Research Thesis	3	Span course
PHYS 479	Honours Research Project	3	
PHYS 489	Special Project	3	
PSYC 380	Honours Research Project Sem	9	Span course
PSYC 395	Psychology Research Project 1	6	
PSYC 396	Undergraduate Research Project	3	
PSYC 450	Research Project & Seminar	9	Span course
PSYC 494	Psychology Research Project	9	Span course
PSYC 495	Psychology Research Project 2	6	
PSYC 496	Senior Honours Research 1	6	
PSYC 497	Senior Honours Research 2	6	
PSYC 498	Senior Honours Research	9	Span course
PSYT 400	Research Project in Psychiatry	6	Span course; added 2012-04
REDM 396	Undergraduate Research Project	3	

Courses removed from this list

Course	Credits	When removed	Why removed; Notes
BIOC 460 Advanced Lab in Biochemistry	6	2011-09	Course retired; last offered in academic year 2008/09. *(However, see new course BIOC 462, included on the list above.)*
BIOL 377 Independent	3	2011-09	Formerly, this course was offered as either a reading or

Reading Project (Was "Independent Studies 1")			research courses. BIOL 377 is now only a reading course. *(There are many other Biology research courses; see list above.)*
BIOL 471 Independent Studies 3	6	2011-09	BIOL 471/477/478 were last offered in academic year 2006/2007. They were offered as either reading or research courses. *(There are many other Biology research course; see list above.)*
BIOL 477 Independent Studies 4	3		
BIOL 478 Independent Studies 5	3		