The Academic Committee approved the following on Tuesday, 23 September 2014:

SECTION A: New Courses

1) Redpath Museum
   REDM 511 Advanced Museum-Based Science 3 credits

2) Medical Physics
   MDPH 396 Undergraduate Research Project 3 credits

SECTION B: (For Information)

1) Computer Science
   - Cotutelle Program (Ph.D. Program)

2) Courses on Dean’s Multidisciplinary Undergraduate Research List (DMURL)

3) B.Sc. Global Designation
# New Course

## New Data

<table>
<thead>
<tr>
<th>Program Affected?</th>
<th>N</th>
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<tbody>
<tr>
<td>Program Change Form Submitted?</td>
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<tr>
<td>Subject/Course/Term</td>
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<tr>
<td>Credit Weight or CEU's</td>
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</tr>
<tr>
<td>Course Activities</td>
<td>Schedule Type</td>
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<tr>
<td></td>
<td>A - Lecture</td>
</tr>
<tr>
<td></td>
<td>M - Seminar</td>
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<tr>
<td>Total Hours per Week</td>
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<tr>
<td>Total Number of Weeks</td>
<td>13</td>
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<tr>
<td>Course Title</td>
<td>Official Course Title:</td>
</tr>
<tr>
<td></td>
<td>Course Title in Calendar:</td>
</tr>
<tr>
<td>Rationale</td>
<td>The course integrates the long-standing Redpath seminar series with in-depth discussion and student presentations to allow senior undergraduate and graduate students to develop an advanced understanding of Museum-based science. The Redpath Museum does not currently offer and advanced level seminar course, and together with upper level lab-based courses REDM 400 (Science and Museums) and REDM 500 (Comparative Methods in Natural History). REDM 511 will help the Museum foster a broader knowledge of the natural world and provide comprehensive training in hypothesis testing approaches used in natural history, biodiversity science, systematics, and evolutional ecology. Each year the course will emphasize a particular topic in the subject area, such as &quot;Testing adaptive hypotheses.&quot; &quot;Paleo-ecological reconstruction,&quot; and &quot;Species distribution modeling.&quot; In it's first year, the course will focus on testing the role of adaptation in the evolutionary process, with the goal of teaching students how to distinguish between adaptive and non-adaptive explanations of natural history phenomena.</td>
</tr>
<tr>
<td>Responsible Instructor</td>
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</tr>
<tr>
<td>Course Description</td>
<td>The course will allow senior undergraduates and graduate students to become intimately acquainted with key primary</td>
</tr>
</tbody>
</table>
literature in museum-based science and the major issues challenging the field. Course components will include the weekly Redpath seminar series, and also a 2-hour weekly lecture, presentation, and discussion session.

Teaching Dept. 0054 : Redpath Museum
Administering Faculty/Unit SC : Faculty of Science
Prerequisites Evolution (Biol 304), Science and Museums (REDM 400) and permission from instructor. Web Registration Blocked? : N
Corequisites
Restrictions
Supplementary Calendar Info
Additional Course Charges
Campus Downtown
Projected Enrollment 12
Requires Resources Not Currently Available N
Explanation for Required Resources
Required Text/Resources Sent To Library?
Library Consulted About Availability of Resources?
Consultation Reports Attached?
Effective Term of Implementation 201501
File Attachments REDM 511 syllabus.pdf
To be completed by the Faculty
For Continuing Studies Use

Approvals Summary

<table>
<thead>
<tr>
<th>Version No.</th>
<th>Departmental Curriculum Committee</th>
<th>Departmental Meeting</th>
<th>Departmental Chair</th>
<th>Other Faculty</th>
<th>Curric/Academic Committee</th>
<th>Faculty</th>
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<td>Submitted to Curriculum/Academic Committee for approval Created on: Sep 16 2014</td>
</tr>
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</table>
Advanced Museum-Based Science: Testing Adaptive Hypotheses
REDM 511 - Course Syllabus

Instructor:
Rowan D H Barrett (Course Coordinator)
rowan.barrett@mcgill.ca
Office: Redpath 303A; Phone: 398-4086

Workload:
3 credits: 1-hr seminar and 2-hr lecture, presentation, and discussion

Class time and room number:
Winter Term 2015 (offered in alternate years)
Lectures, presentations and discussion: Wed 14:00-16:00, Hodgson room, Redpath Museum
Seminar: Fr 11:30-12:30, Teaching lab, Redpath Museum

Prerequisites:
Evolution (BIOL 304), Science and Museums (REDM 400), or approval from instructor

Reading:
Selected research articles.

Maximum enrolment:
12 students

Course Description:
“The main task of any theory of evolution is to explain adaptive complexity”
(Maynard Smith, 1969, p.82).

Adaptation is at the core of modern science in natural history, evolution, and biodiversity. It can be studied as either a pattern or as a process, and some of the most satisfying explanations of anomalous biological phenomena show them either to be adaptations or to have been produced as by-products of the adaptive process. This course will review major concepts and theories of adaptation, empirical methods for studying adaptation, and the diversity of adaptive processes. Course components will include the weekly Redpath seminar series, and also a 2-hour weekly lecture, presentation, and discussion session.

Objectives:
This course is designed to allow senior undergraduate and graduate students to have an advanced understanding of the role of adaptation in the evolutionary process, and teach them how to distinguish between adaptive and non-adaptive explanations of biological phenomena.

Evaluation:
Grades will be based on oral presentations (25%) and leading of discussion sessions (10%), a research project (35%), weekly assignments (20%), and participation in class discussions (10%).

Student presentations: Each week, one student will select a recent research paper that is loosely aligned with the paper assigned for reading that week (in consultation with the instructor). Both papers will be distributed to the class for reading. Following a 30 minute lecture by the instructor, the student will give a 1 hour seminar based on the papers, and will guide the related discussion (with help from the instructor). Evaluation of the seminar will be based on clarity, sufficient background information, appropriate description and understanding of quantitative methods and results, and sufficient explanation of the significance of the work. Evaluation of the leading of discussion sessions will be based on general knowledgeability about the topic and the quality of prepared discussion points. The readings for the week represent an entry point to the topic but should not be the only sources used to address it.
Research Project: Students will write an article in the style of a “Brief Communications Arising” in *Nature* (http://www.nature.com/nature/authors/gta/commsarising.html) that critiques any primary research article read by the class during the course. This project will not be due until the end of the term.

Assignments: Students will choose 3 Redpath seminars over the semester to write assignments about. Assignments will use the style of a “Summary Paragraph” in *Nature* (http://www.nature.com/nature/authors/gta/2c_Summary_para.pdf) to summarize the key points of the seminar within the context of a general research problem related to adaptation.

Participation in seminar question period and discussions: Students will be graded on both questions asked to the speaker in the Redpath seminar and on participation in class discussion periods.

*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.*

Schedule:

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Lecture, presentation, and discussion topic</th>
<th>Redpath seminar</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Jan 07</td>
<td>Introduction – course structure</td>
<td>Jan 09 TBA</td>
</tr>
</tbody>
</table>

**Section 1: Major concepts and theories of adaptation**

| 2    | Jan 14 | Historical development of the concept of adaptation | Jan 16 TBA      |
| 3    | Jan 21 | The argument from design                        | Jan 23 TBA      |
| 4    | Jan 28 | The genetic basis of adaptation                  | Jan 30 TBA      |

**Section 2: Empirical methods for studying adaptation**

| 5    | Feb 04 | Testing adaptation using phenotypic manipulation | Feb 06 TBA      |
| 6    | Feb 11 | Phylogenetic systematics of adaptation            | Feb 13 TBA      |
| 7    | Feb 18 | Laboratory experimental evolution                 | Feb 20 TBA      |
| 8    | Feb 25 | Empirical study of adaptation in natural populations | Feb 27 TBA |

| 9    | Mar 04 | Reading week                                    | Mar 06 Reading week |
| 10   | Mar 11 | Molecular population genetics of adaptation      | Mar 13 TBA        |
| 11   | Mar 18 | Paleontological data and the study of adaptation | Mar 20 TBA        |

**Section 3: The diversity of adaptive processes**

| 12   | Mar 25 | Adaptation of clades                           | Mar 27 TBA       |
| 13   | April 01 | Adaptation in subdivided populations           | April 03 TBA     |
| 14   | April 08 | Adaptation of parasites                        | April 10 TBA     |

**Statement Regarding Academic Integrity:**

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 Procedure (see www.mcgill.ca/students/srr/honest/) for more Information.
Josie
We asked the following departments for consultation:
biology
Geography
Natural Resource Centre
MSE
Anthropology

Geography replied & MSE - I have not heard back from the others

Marie Passalalpi La Ricca
Administrative Officer

McGill University
514-398-4086 ext. 3188
514-398-3185 fax
www.mcgill.ca/redpath

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Avant l' impression, il faut penser à l'Environnement.
Josie D’Amico

From: Michel F. Lapointe, Prof.
Sent: September-09-14 2:25 PM
To: Marie LaRicca
Subject: RE: REDM 511 from Redpath Museum.

Ms La Ricca

Having inspected the proposed course form, the geography department has no objections and indeed encourages its creation.

Prof. Michel Lapointe
Chair of Undergraduate Affairs Committee of McGill Geog

-----Original Message-----
From: Marie LaRicca [mailto:marie.laricca@mcgill.ca]
Sent: Tuesday, September 09, 2014 2:19 PM
To: LAPOINTE@GEOG.MCGILL.CA
Cc: Rowan Barrett
Subject:

Dear Prof. Lapointe,
Enclosed is a course proposal REDM 511 from Redpath Museum. This is being sent to you for course consultation. Could you please send us feedback before September 23rd. The Faculty of Science will be presented this course at this date.

Thank you for your time and your feedback.
Sincerely

Marie Passalalpi La Ricca
Administrative Officer

McGill University
514-398-4086 ext. 3188
514-398-3185 fax
www.mcgill.ca/redpath

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Before printing, think about the Environment.
Avant l’ impression, il faut penser à l’Environnement.
Hi Marie,

The MSE has no objections to this new course proposal (REDM 511).

Thanks!

George

Senior Faculty Lecturer, McGill School of Environment Associate Director Undergraduate Affairs, McGill School of Environment

McGill School of Environment
Rowles House,
Macdonald Campus of McGill University
21, 111 Lakeshore Road,
Ste-Anne-de-Bellevue, QC, H9X 3V9

Tel: 514-398-7550
E-mail: george.mccourt@mcgill.ca

-----Original Message-----
From: Marie LaRicca
Sent: Wednesday, September 10, 2014 9:17 AM
To: George McCourt
Cc: Rowan Barrett
Subject:

Dear Prof. McCourt,
Enclosed is a course proposal REDM 511 from Redpath Museum. This is being sent to you for course consultation. Could you please send us feedback before September 23rd. The Faculty of Science will be presented this course at this date.

Thank you for your time and your feedback.
Sincerely

Marie Passalalpi La Ricca
Administrative Officer
Dear colleagues,

As Director of undergraduate Studies, I consulted departmental colleagues and especially those closest to the theme of this proposal. Here is the outcome:

The department of Earth & Planetary Sciences supports the proposal for the course REDM 511. Our participation in the Minor in Natural History shows our commitment to broader interdisciplinary training in natural sciences. We appreciate the positive impact of REDM 400 where our faculty members are welcome to supervise collection-based projects or give an invited lecture. The research of some of our faculty members involves testing hypotheses for physical events (e.g. late Permian volcanism, oxygenation of the early Earth's ocean and atmosphere) that impacted, locally or globally, the evolution of life. The teaching team of REDM 511 is welcome to invite them to bring their perspective to this new course.

Regards,

Jeanne Paquette
Associate Professor
Director of Undergraduate Studies in Earth & Planetary Sciences
-----Original Message-----
From: Marie LaRicca
Sent: September-29-14 1:39 PM
To: Josie D'Amico
Cc: David M. Green, Dr.; Rowan Barrett
Subject: FW: Feedback Request RE: Course Proposal REDM 511

Josie,
Here are the comments from Prof. Savelle in the Anthropology dept.
Marie

Marie Passalalpi La Ricca
Administrative Officer

McGill University
514-398-4086 ext. 3188
514-398-3185 fax
www.mcgill.ca/redpath
Dear Marie;

The course looks to be very interesting, and there is certainly no overlap with anthropology/archaeology.

I assume this is what the consultation request is about?

Regards,
James Savelle

-----Original Message-----
From: Connie Di Giuseppe
Sent: Monday, September 29, 2014 8:41 AM
To: Marie LaRicca
Cc: Rowan Barrett; James Savelle, Prof.
Subject: Feedback Request RE: Course Proposal REDM 511

Dear Marie,

Sorry for not responding to your email earlier. I am copying Prof. James Savelle, Undergraduate Program Director for the Department of Anthropology, who will get back to you regarding your request below.

Please don't hesitate to contact if you have any questions.

Best regards,
Connie
***

Connie Di Giuseppe | Manager - Student Affairs | Administrative Service Centre - Leacock 2 | Departments of Anthropology / History and Classical Studies / Jewish Studies / Sociology | Leacock Building, 7th Floor | 855 Sherbrooke St. West, room 713, Montreal, Quebec, H3A 2T7 | tel: 514-398-4285 | fax: 514-398-7476 | connie.digiuseppe@mcgill.ca

-----Original Message-----
From: Marie LaRicca
Sent: Tuesday, September 09, 2014 1:51 PM
Cc: Rowan Barrett
Subject: 

Please forward the following email to the Chair of your Curriculum Committee - thank you

______________
Enclosed is a course proposal REDM 511 from Redpath Museum. This is being sent to you for course consultation. Could you please send us feedback before September 23rd. The Faculty of Science will be presented this course at this date.

Thank you for your time and your feedback.
Sincerely

Marie Passalalpi La Ricca
Administrative Officer

McGill University
514-398-4086 ext. 3188
514-398-3185 fax
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Avant l' impression, il faut penser à l'Environnement.
Program Affected? | N
---|---
Program Change Form Submitted? | |
Subject/Course/Term | MDPH 396
  - one term
Credit Weight or CEU’s | 3 credits
Course Activities | Schedule Type | Hours per week
PW - Project | 9
Total Hours per Week : 9
Total Number of Weeks : 13
Course Title | Official Course Title : Undergraduate Research Project
Course Title in Calendar : Undergraduate Research Project
Rationale | This new course coordinated by the Medical Physics Unit is an undergraduate research project course. This course will provide B.Sc. students with research opportunity to work with Medical Physics researchers on a broad range of projects. It will expand the current options available to students and thus further enhance the interdisciplinary nature of the undergraduate program. The course also matches the curriculum goals of the Medical Physics Research Training Network (MPRTN), an NSERC-funded CREATE program in medical physics research training (mp rtn.com). This course will be added to the roster of 396 series of Undergraduate Research Projects Courses currently available to Science students (www.mcgill.ca/science/ours/396).
Responsible Instructor | |
Course Description | Independent research project with a final written report and an oral presentation.
Teaching Dept. | 0224 : Medical Physics Unit
Administering Faculty/Unit | YI : Medicine (Non-Tr)
| Prerequisites                          | Completion of at least one undergraduate term with CGPA of 3.0  
| Web Registration Blocked? : N          |
|----------------------------------------|---------------------------------------------------------------|
| Corequisites                           |                                                                |
| Restrictions                          | This course cannot be taken under the S/U option. Students cannot be supervised by the same instructor for two 396 Science courses. Open to students in programs offered by the Faculty of Science. Since this course takes place within a clinical department and may require access to confidential data, the proposed research project needs departmental approval and may need research ethics board approval. |
| Supplementary Calendar Info            |                                                                |
| Additional Course Charges             |                                                                |
| Campus                                 | Downtown                                                      |
| Projected Enrollment                   | 5                                                             |
| Requires Resources Not Currently Available | N                                                |
| Explanation for Required Resources     |                                                                |
| Required Text/Resources Sent To Library?|                                                                |
| Library Consulted About Availability of 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

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<thead>
<tr>
<th>Version No.</th>
<th>Departmental Curriculum Committee</th>
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<th>Departmental Chair</th>
<th>Other Faculty</th>
<th>Curric/Academic Committee</th>
<th>Faculty</th>
<th>SCTP</th>
<th>Version Status</th>
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| 3           |                                   |                      |                   |               |                          |         |     | Submitted to Department Chair for approval  
|             |                                   |                      |                   |               |                          |         |     | Edited by: Jan Peter Frans Seuntjens  
|             |                                   |                      |                   |               |                          |         |     | on: Sep 9 2014                            |
| 1 |  |  |  |  | Submitted to Department Chair for approval  
Edited by: Jan Peter Frans Seuntjens  
on: Aug 1 2014 |
|---|---|---|---|---|---|
| 2 |  |  |  |  | Submitted to Department Chair for approval  
Created on: Jul 31 2014 |
Request for Approval of Cotutelle Program

Date: December 1, 2013

Student Name: ____________________________
McGill ID Number: ____________________________

Department Name: Computer Science

Effective Term: Fall 2013
Admission Level: PhD

☐ Cotutelle-France
☐ Cotutelle-U21

Name of Partner Institution: École Polytechnique

Program of Study:

➢ Required Courses:
(Total credits required and Course Numbers, Titles & Credit Values if available)

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<td>BINF 621</td>
<td>Bioinformatics: Molecular Biology</td>
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<td>COMP 561</td>
<td>Computational Biology Methods &amp; Research</td>
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<td>COMP 616D1</td>
<td>Bioinformatics Seminar</td>
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<td>COMP 616D2</td>
<td>Bioinformatics Seminar</td>
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<td>COMP 618</td>
<td>Bioinformatics: Functional Genomics</td>
<td>3</td>
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<tr>
<td>COMP 766</td>
<td>An Introduction to Crowdsourcing and Human-Computation Techniques</td>
<td>4</td>
</tr>
<tr>
<td>BTEC 555</td>
<td>Structural Bioinformatics</td>
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➢ Required Examinations:
(Comprehensive, Language, etc.)

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<tr>
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<th>Course Title</th>
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<tr>
<td>COMP 700</td>
<td>&quot;Comprehensive examination&quot;</td>
<td>McGill, Montréal</td>
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<tr>
<td>COMP 701</td>
<td>Thesis proposal and area examination</td>
<td>McGill, Montréal</td>
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<tr>
<td>Thesis Defense</td>
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<td>École Polytechnique, France</td>
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➢ Other:
(Thesis, etc.)

Research and writing of a thesis titled "Quantification et prédiction des structures secondaires et tertiaires des ARN associées à des informations non-codantes."
Research work includes: literature review of state-of-the-art research and knowledge, design and programming of algorithms, running computational experiments, writing a scientific articles (with minimum of 2 published papers and 1 submitted at the time of the thesis defense).

The thesis will be approximately 150-200 pages long, written in French with a English abstract.

Approvals sign-off:

| Student |  |  |  
|---|---|---|---|
| Supervisor | Jérôme Waldispühl |  |  
| Department GPD | Pra Kish Panangaden |  |  
| Department Chair | C. Ducke |  |  
| Faculty (curriculum committee) | Laurie Hendren |  |  

Please forward this form, together with a copy of the corresponding Memorandum of Agreement, to Maggie Do Couto (maggie.docouto@mcgill.ca) at Graduate and Postdoctoral Studies

Graduate and Postdoctoral Studies:

- [ ] Approval
- [ ] Refusal (Reasons)

Name (Print) | Signature | Date
---|---|---

2
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.
- Please review the proposed addition.
- 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 www.mcgill.ca/science/research/ours/dmurl and also in the Calendar at www.mcgill.ca/study/2014-2015/university_regulations_and_resources/undergraduate/uq_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, September 2012, and September 2013. The current list is given below.

Additions or modifications?

For consideration:
- GEOG 460 (Research in Sustainability). Requested by a student. Please see Annex 1.
- Are there any other courses that should be added to this list, as a result of courses created or modified? Or deletions?

Recent changes, for reference:
- EPSC 470: Added 2014-01
- GEOG 489: Added 2014-01
- PHAR 396: Added 2014-09
- PHAR 598: Added 2014-01

Note that future 396 courses (e.g. possible Medical Physics 396) will be added to this list.

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?** Courses in which some students are given reading courses and other students are given research projects (i.e., EPSC 482). 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. (GEOG 490 was reading-or-research, and is now reading-only, but remains on the list for students who took it as research in recent years.)*

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Cr</th>
<th>Comment</th>
<th>Research or reading?</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGRI 519</td>
<td>Sustainable Development Plans</td>
<td>6</td>
<td>Added 2010/01/15</td>
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<tr>
<td>ANAT 396</td>
<td>Undergraduate Research Project</td>
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<td>ANAT 432</td>
<td>Honours Research Project</td>
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<td>(Not on very first list years ago)</td>
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<td>Research in Ecology and Development in Africa</td>
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<td>COMP 400</td>
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<td>GEOG 492</td>
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<td>Human Genetic Research Project</td>
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<td>Ugrad Research Proj-Microbiol</td>
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<td>Ugrad Research Proj-Immunol</td>
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<td>PHAR 599</td>
<td>Res Projects in Pharmacology</td>
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<td>PHGY 396</td>
<td>Undergraduate Research Project</td>
<td>3</td>
<td></td>
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<td>PHGY 419</td>
<td>Project &amp; Seminar in Immunology</td>
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<td>PHGY 461</td>
<td>Experimental Physiology</td>
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<td>PHYS 396</td>
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<td>3</td>
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<td>PHYS 449</td>
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<td>PHYS 459</td>
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<td>Credits</td>
<td>When removed</td>
<td>Why removed; Notes</td>
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<td>BIOC 460 Advanced Lab in Biochemistry</td>
<td>6</td>
<td>2011-09</td>
<td>Course retired; last offered in academic year 2008/09. (However, see new course BIOC 462, included on the list above.)</td>
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<td>BIOL 377 Independent Reading Project (Was &quot;Independent Studies 1&quot;)</td>
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<td>2011-09</td>
<td>Formerly, this course was offered as either a reading or research course. BIOL 377 is now only a reading course. (There are many other Biology research courses; see list above.)</td>
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<tr>
<td>BIOL 471 Independent Studies 3</td>
<td>6</td>
<td></td>
<td>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.)</td>
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<td>BIOL 477 Independent Studies 4</td>
<td>3</td>
<td>2011-09</td>
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<td>BIOL 478 Independent Studies 5</td>
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Annex A - GEOG 460 Research in Sustainability (3 credits)


**Overview**

*Geography:* Through engaging in real-world sustainability challenges through hands-on research, learn to critically analyze problems that arise at the interface of multiple disciplines including the scientific-technological, socio-economic, political-institutional, ethical, and human behavioural. Develop an understanding of the leverages and roadblocks in achieving a sustainability transition.

**Terms:** Fall 2014

*Instructors:* Brian Robinson (Fall)

*Fall*

*Prerequisite:* GEOG 360

Please see attached for a detailed course outline.

Inclusion on the DMURL was requested by a student to Victor Chisholm, Undergraduate Research Officer.
B.Sc. Global Designation – Student Information
Faculty of Science, McGill University

September 23, 2014

Note: The B.Sc. Global Designation was approved by the Faculty of Science on December 4, 2012. This document and the associated lists of suggested approved courses and draft application form have been prepared as steps in the implementation process.

1. Introduction – What is the B.Sc. Global Designation?

The Faculty of Science B.Sc. Global Designation recognizes Bachelor of Science (B.Sc.) students who have gone beyond a typical B.Sc. experience by broadening their horizons through participation in language classes, the performance of independent research and including the “real-world” (global-related study and/or non-McGill study or work experience) in their program.

2. Eligibility

To receive the designation of B.Sc. Global at graduation, a student must achieve the following requirements (including two required and one complementary element):

2.1 Required Elements

Language Course: At least 3 credits of a McGill language course, studying any language that is not the student's first language.

Research Course: At least 3 credits of research from any research course which is on the approved research courses for the McGill Faculty of Science’s Dean’s Multidisciplinary Undergraduate Research List (DMURL) (see http://www.mcgill.ca/science/research/ours/researchcourses).

2.2 Complementary Element

In addition to the required elements, students must complete at least one of the following complementary elements.

Field Studies: Completion of an approved field studies course. Any course which is designated as a field studies course, is open to Science students, and which involves a significant non-local element. (An informal definition of “non-locality” is a field study that requires traveling and staying for a period of time outside of Montreal.) A list of pre-approved courses is provided on the Global Designation website [See Appendix 1]. To apply for a course not currently found on the pre-approved list to be added to the list, please contact the Global Designation Coordinator.

Internship: Completion of an Industrial Practicum Course or the Internship Year in Science (see http://www.mcgill.ca/science/programs/internships).
Exchange: At least one term as an exchange student at a university outside of Montreal (see http://www.mcgill.ca/students/international/goabroad/exchange).

“Global” courses offered within Science or from other faculties: At least three credits from a McGill course with a substantial Global component. Such courses must be at the 200-level or above, and may not be a “General Interest” type of course. Courses from both within Science and in other faculties may be used to satisfy this requirement. A list of pre-approved courses is listed on the Global Designation web site [see Appendix 2]. To apply for a course not currently found on the pre-approved list to be added to the list, please contact the Global Designation Coordinator.

2.3 Other Requirements

Furthermore, considering all qualifying B.Sc. Global Designation courses on your transcript at graduation time:
• 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.

3. Application

To apply for the B.Sc. Global Designation, students must submit the web form found at [the Global Designation website] in which they detail how they have satisfied the two required and one complementary requirements. This form should be completed before the student's last term of studies. [Appendix 3]

4. Contact Information

The Global Designation will be administered by the Global Designation Coordinator, Martine Dolmière.
Appendix 1: Suggested Pre-Approved Field Courses

Field Study Semesters:

Canadian Field Studies in Africa (CFSIA)
Panama Field Study Semester (PFSS)
Barbados Field Study Semester (BFSS)
Barbados Interdisciplinary Tropical Studies (BITS)

Courses:

Note: Where applicable, course restrictions are noted according to the list of “Restricted courses outside the Faculty of Science”.

BIOL 240 (3) Monteregian Flora (at Mont St. Hilaire)
BIOL 331 (3) Ecology/Behaviour Field Course (at Mont St. Hilaire)
BIOL 334 (3) Applied Tropical Ecology (in Barbados)
BIOL 335 (3) Marine Mammals (taught at the Huntsman Marine Science Centre, Bay of Fundy, N.B.)
BIOL 432 (3) Limnology
BIOL 573 (3) Vertebrate Palaeontology Field Course (in Alberta and/or Saskatchewan)
EPSC 231 (3) Field School I
EPSC 331 (3) Field School 2
EPSC 341 (3) Field School 3
GEOG 495 (3) Field Studies – Physical Geography (in southern Quebec)
GEOG 496 (3) Geographical Excursion (in Barbados)
GEOG 499 (3) Subarctic Field Studies (in Schefferville)
GEOG 555 (3) Ecological Restoration
PLNT 358 (3) Flowering Plant Diversity - on Approved list
WILD 401 (4) – Fisheries and Wildlife Management - on neither the Approved nor Not Approved list
WILD 475 (3) Desert Ecology (Arizona, Colorado, Utah) – on neither the Approved nor Not Approved list
Appendix 2: Suggested Pre-Approved “Global” Courses

Note: Updated from a list compiled in 2012, with feedback from the McGill School of Environment at the time.

AGEC 442 (3) - Economics of International Agricultural Development
AGRI 411 (3) - Global Issues on Development, Food and Agriculture
ANTH 318 (3) - Globalization and Religion
BUSA 356 (3) - Management in Global Context
BUSA 493 (3) - Global Economic Competitiveness
ECON 313 (3) - Economic Development 1
ECON 314 (3) - Economic Development 2
ECON 347 (3) - Economics of Climate Change
ENVR 200 (3) - The Global Environment
ENVR 201 (3) - Society, Environment and Sustainability
ENVR 519 (3) - Global Environmental Politics
FINE 480 (3) - Global Investments
GEOG 200 (3) - Geographical Perspectives: World Environmental Problems
GEOG 205 (3) - Global Change: Past, Present and Future
GEOG 216 (3) – Geography of the World Economy
GEOG 210 (3) - Global Places and People
GEOG 310 (3) – Development and Livelihoods
GEOG 311 (3) - Economic Geography
GEOG 316 (3) - Political Geography
GEOG 360 (3) - Analyzing Sustainability
GEOG 403 (3) - Global Health and Environmental Change
GEOG 530 (3) - Global Land and Water Resources
INDR 492 (3) - Globalization and Labour Policy
INTD 200 (3) - Introduction to International Development
INTD 397 (3) - International Development
MGCR 360 (3) - Social Context of Business
MGPO 469 (3) - Managing Globalization
MGPO 475 (3) - Strategies for Developing Countries
NRSC 340 (3) - Global Perspectives on Food
NUTR 341 (3) - Global Food Security
NUTR 501 (3) – Nutrition in Developing Countries
POLI 342 (3) - Canadian Foreign Policy
POLI 345 (3) - International Organizations
POLI 362 (3) - Political Theory and International Relations
SOCI 307 (3) - Sociology of Globalization
SOCI 519 (3) - Gender and Globalization
SOCI 560 (3) - Labour and Globalization
URBP 201 (3) - Planning the 21st Century City
Appendix 3: Draft Application Form for B.Sc. Global Designation

To receive the designation of B.Sc. (Global) at graduation, a student must achieve the following requirements (including two required and one complementary element):

Student Information

Last Name _____________  First Name _________________
McGill ID______________  McGill Email _____________________

Required Element 1: Language Course – Minimum 3 credits

Course ____________ (e.g. GERM XXX)  Term__________ (e.g. Fall 2014)

Required Element 2: Research Course – Minimum 3 credits

Course ____________ (e.g. BIOL XXX)  Term__________ (e.g. Fall 2014)

Complementary Element

Element Claiming [Drop down box]: Field Study / Internship / Exchange / “Global” Course

1. If Field Study – Minimum 3 credits:
[Drop down box]: Field Semester / Field Course – Minimum 3 credits

If Field Semester:
[Drop down box]: CFSIA / PFSS / BFSS / BITS / Other Term ________ (e.g. Fall 2014)
If Other, describe: ______________

If Field Course – Minimum 3 credits:
Course ____________ (e.g. ENVR XXX) Term__________ (e.g. Fall 2014)
See [URL] for a list of pre-approved field semesters and study courses.

2. If Internship:
Name of Employer __________________  Term ____ _______ (e.g. Fall 2014)

3. If Exchange:
Name of Host Institution ________________  Term ___________ (e.g. Fall 2014)

4. If “Global” Course – Minimum 3 credits:
Course ____________ (e.g. POLI XXX) Term__________ (e.g. Fall 2014)
See [URL] for a list of pre-approved global courses.