



New Course Proposal Form

(07/2004)

1. Will this new course affect a current program?
If "yes", has a Program Revision Form been submitted concurrently?

Yes No
Yes No

2. Teaching Department:

Biology

3. Administering Faculty/Unit:

Graduate Studies

6. Responsible Instructor

Claire de Mazancourt

4. Campus (Downtown, Macdonald, Off Campus, Distance Ed, Other – specify)

Gault Nature Reserve, Mont Saint-Hilaire Biosphere Reserve

5. Effective Term of Implementation (Ex. Sept. 2004 = 200409)

Term:

Summer 2010

7. Course Title (Limit 30 Characters) - required for all courses:

Biodiversity Science

9. Course Title to Appear in the Calendar (optional) (Limit 59 characters):
Note: This can ONLY be an expansion of word(s) abbreviated in the 30 character course title above.

Biodiversity Science

10. Credit Weight (or CEU's for non-credit CE courses):

3

8. Course Number(s)
Indicate course number & the number of terms spanned: (tick all that apply)

Subject/course number: BIOL 645

Course(s) Span:

1 term
 2 consecutive terms (D1, D2)
 2 non-consecutive terms (N1, N2)
 3 consecutive terms (J1, J2, J3)

11. Rationale for new course

The course will build on the expertise brought together by the newly funded FQRNT Biodiversity Centre. The course will give a high level overview of concepts, methods and questions related to the different aspects of biodiversity science. The course is intended for graduate students working in biodiversity science. It is different from existing courses in level and depth (compared to BIOL 310 for example) and in focus: this course targets science professionals at a high level (graduate students), focuses on the scientific aspects of biodiversity science: discovering biodiversity; biodiversity change and ecosystem services; management and adaptation to biodiversity changes. Other existing high level courses on Biodiversity in Quebec target NGO professionals and have a more policy-oriented perspective.

12. Course Description (as it will appear in the Calendar [maximum 50 words]):
(N.B. Faculty of Medicine must append complete course outline)

Concepts, methods and questions related to the different aspects of biodiversity science, including discovering biodiversity; biodiversity change and ecosystem services; management and adaptation to biodiversity changes.

13. Supplementary information to appear in the Calendar in addition to the course description.
Such as: equivalent course(s), contact hours, enrolment limitations, language of instruction etc.
Please enter the information as it should appear in the calendar notes.

Student commitment: students should not expect to do anything other than the course during those 2 weeks. **Language:** The course will accommodate both French and English speaking participants, but students should have a good understanding of English. Lectures will be given in English. Lecture slides will be in French whenever possible. Seminars will be in English only. Students can submit their work in French or English.
The course will be offered every 3rd year. It will be offered in other Quebec Universities in other years.

14. Schedule Types(s):
(Enter all that apply – see course guidelines for a complete list.)
(i.e. Lecture, Labs, Tutorial)

	Hours per Week		Hours per Week		Hours per Week
Lectures	<input type="text" value="15"/>	Discussions	<input type="text" value="2"/>		<input type="text"/>
Seminars	<input type="text" value="2"/>		<input type="text"/>		<input type="text"/>
Total Hours per Week:					<input type="text" value="19"/>
Total Number of Weeks:					<input type="text" value="2"/>

15. Projected Enrolment:

16. Required text and/or preliminary reading list sent to library?

Yes No

17. Prerequisite(s) (Courses or Tests)
Specify course number(s) or name(s) of test(s):

If the student does not have a prerequisite should web registration be blocked?
 Yes No

If "Yes" complete A and B:

A. Indicate minimum grade or test score(s) the student must attain in prerequisite course(s) or test(s):

B. Can the prerequisite course(s) or test(s) be taken in the same term as this course?
 Yes No

18. Corequisite(s) Course Number(s):
Specify course number(s) and title(s):

If the student does not register for the corequisite in the same term should web registration be blocked?
 Yes No

19. Restriction(s):

20. Consultation Reports Attached
 Yes N/A

21. Additional Course Charges (must be approved by the Fee Policy Committee)

Description of Fee – <u>Approved by Fee Policy Committee*</u> (e.g. screening fee)	Amount
participation to course expenses (Food and accommodation, course booklet, travel to sites)	\$550*

22. Requires Teaching, Physical, or Financial Resources Not Currently Available (attach explanation)
 Yes No

INFORMATION FOR ADMISSIONS, RECRUITMENT & REGISTRAR'S OFFICE

To be completed by the Faculty

Slot Course: Yes No

Thesis Component: Yes No

To be completed by ARR

CIP Code

For Continuing Education Use

CE Admin. Unit :

CE Non-Grant Courses:

Flat Rate: CdnFlat Rate: Yes N/A

23. Approvals:

Routing Sequence	Departmental Meeting	Departmental Chair	Other Faculty	Curric/Academic Committee	Faculty	SCTP
Name	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Signature	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Date	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Departmental Contact Person (name/phone/email)	<input type="text"/>					

Additional information:

As a course for the FQRNT Biodiversity Science Centre, this course will take graduate students from all universities involved in the centre.

Course deliverable fee of \$550 was approved by McGill's Fee Policy Committee.

The **Quebec Centre for Biodiversity Science (QCBS)** brings together some of the province's best scientific minds to work on the emerging problem of biodiversity loss. The objective of the QCBS is to foster the emergence of an integrated science of biodiversity within Québec. There is growing recognition that the diversity of life on Earth, including the variety of genes, species and ecosystems, is an irreplaceable natural heritage crucial to human well-being and sustainable development. The QCBS will seek to uncover the basic scientific principles required for the discovery, study, and sustainable use of Québec's biodiversity.

The QCBS comprises 59 researchers and 7 academic partner institutions—McGill University, Université de Montréal, Université du Québec à Montréal, Bishop's University, Université du Québec à Rimouski, Université de Sherbrooke, Université de Laval—and 2 public institutions the Montreal Botanical Gardens and Agriculture and Agri-food Canada.

Biodiversity science has emerged in the last fifteen years to better understand and counter the causes and consequences of biodiversity loss. The researchers gathered under the QCBS are experts in the field of Biodiversity Science with particular strengths in several fields of high strategic priority to Québec: Invasive species, climate change impacts on diversity and distribution, habitat loss and transformation, biocontrol, and ecological economics. This expertise extends to all of Québec's major groups of organisms (microorganisms, plants, insects, aquatic invertebrates, fish and mammals) and ecological zones (mixed hardwood forest, boreal forest, taiga, subarctic, and arctic). The QCBS aims to foster the research and train the highly qualified personnel needed to meet the scientific and socioeconomic challenges that lie ahead for Québec's biodiversity.

In 2010, the course will be offered by McGill as a course from the Biology department, in the Gault Nature Reserve, Mont Saint-Hilaire Biosphere reserve. The following years, the course will travel to other universities.

Dates: 3-14 May 2010.

A typical day features 3 hours of lectures in the morning; afternoons are dedicated to work on a daily assignment related to the lectures of the day, and project work. Late afternoon, there will be a seminar given by a high profile researcher invited from abroad (4 in the 2-weeks course) or a discussion/workshop (2 in the 2-weeks course).

Assignments can be exercises on paper, on a computer, discussion around a topic/paper; it's open (depending on the subject) but the students need to do something (actively), and in groups. It is important that students don't work on their own: one of the objectives of the course is to build a network between the universities and build links between the different axes. Groups will mix students from different universities, and working on different aspects of biodiversity research.

Projects are aimed for the students to make the links between the different aspects of biodiversity science they are taught about. Students will work in group to apply what they learn to a particular ecosystem: Gault Nature Reserve at Mont Saint-Hilaire. Project work will thus link the different aspects of biodiversity science: phylogenetic, ecological and socioeconomic aspects. Students will produce individual write ups and make an oral presentation of their project. The last day will feature students presentations (morning) and synthesis discussion (afternoon), with a panel of professors representing different aspects of biodiversity science.

Seminars international top scientists will be invited to give seminars to the course. Those seminars will not be public, so the students will have direct and privileged access to a top scientist. However, the invited speaker can be asked to give another public seminar while in Montreal.

Course evaluation: 3 individual write-ups of assignments (30%); individual write-up of project (50%) and project presentation (20%). Students will hand in their assignment and project write-ups after the course, and are expected to spend additional time to finish and polish their work.

Lecturers: we are aiming for students to be exposed to the highest profile researchers in our centre. Each lecture can be a different lecturer; there can be co-teaching. Potential lecturers are people listed under each theme in the FQRNT project, all are professors at one of the participating universities.

Provisional list of professors:

Prof. Anne Bruneau, Université de Montréal (confirmed)
Prof. Martin Lechowicz, McGill University (confirmed)
Prof. François-Joseph Lapointe, Université de Montréal (invited)
Prof. Pierre Legendre, Université de Montréal (invited)
Prof. Lauren Chapman, McGill University (confirmed)
Prof. Andrew Hendry, McGill University (to be confirmed)
Prof. Fanie Pelletier, Université de Sherbrooke (to be confirmed)
Prof. Michel Loreau, McGill University (confirmed)
Prof. Elena Bennett, McGill University (invited)
Prof. Jean-Pierre Reveret, Université du Québec à Montréal (invited)
Prof. Philippe Leprestre, Université Laval (to be confirmed)

Consultation. The proposal was sent on October 19th to:

- Paul Lasko (Biology)
- David Green (Redpath)
- Benoit Cote (NRS)
- Marilyn Scott (School of Environment)
- Tim Moore (Geography)
- William Watson (Economics)

William Watson consulted Jennifer Hunt and they have no comments.

Proposed course timetable:

Week 1:

Monday 3 May

9.00 – 10.00	Introduction to Course
10.00-12.00	Visit to Biodiversity Centre, UDM & Botanical garden (visit will include scientific project/ongoing research related to taxonomy and systematics)
14.00 - 15.30	Visit to Convention on Biodiversity
16.00 – 17.00	Seminar: <i>Georgina Mace?</i>
19.30	bus to Gault Nature Reserve

Tuesday 4 may

09.00 - 10.30	Taxonomy and Systematics (<i>Prof. Anne Bruneau</i>)
11.00 - 12.30	Taxonomy and Systematics (<i>Prof. Anne Bruneau</i>)
14.00 – 16.30	Visit of Mont Saint Hilaire research facilities (<i>Prof. Martin Lechowicz</i>)
17.00 – 18.00	Project

Wednesday 5 May

09.00 - 10.30	Phylogenetics, phylogeography and functional diversity
11.00 - 12.30	Phylogenetics, phylogeography and functional diversity
14.00 – 15:30	Practical
16.00 – 17.00	Project
17:30 – 18:30	Evening seminar

Thursday 6 May

09.00 – 10.30	Ecoinformatics
11.00 – 12.30	Ecoinformatics
14.00 – 15:30	Practical
16.00 – 17.00	Project
17.30 - 18.30	Evening Discussion

Friday 7 May

09.00 – 10.30	Causes of biodiversity changes (<i>Prof. Lauren Chapman</i>)
11.00 – 12.30	Causes of biodiversity changes (<i>Prof. Lauren Chapman</i>)
14.00 – 15:30	Practical (<i>Prof. Lauren Chapman</i>)
16.00 – 17.00	Project

Saturday 8 May

09.00 – 10.30	Adaptation in response to environmental changes (<i>Prof. Andrew Hendry</i> , to be confirmed)
11.00 – 12.30	Adaptation in response to environmental changes (<i>Prof. Fanie Pelletier</i> , to be confirmed)
14.00 – 15:30	Practical (<i>Prof. Andrew Hendry, Prof. Fanie Pelletier</i>)
16.00 – 17.00	Project

Week 2:

Monday 10 May

09.00 - 10.30	Biodiversity, ecosystem functioning and ecosystem services (<i>Prof. Michel Loreau</i>)
11.00 - 12.30	Biodiversity, ecosystem functioning and ecosystem services (<i>Prof. Michel Loreau</i>)
14.00 – 15:30	Practical (<i>Prof. Michel Loreau</i>)
16.00 – 17.00	Project
17.30 - 18.30	Evening Seminar

Tuesday 11 May

09.00 - 10.30	Adaptive biodiversity management
11.00 - 12.30	Adaptive biodiversity management
14.00 - 15.30	Practical
16.00 – 17.00	Project
17.30 - 18.30	Evening Discussion

Wednesday 12 May

09.00 - 10.30	Economics of biodiversity and ecosystem services
11.00 - 12.30	Economics of biodiversity and ecosystem services
14.00 – 15:30	Practical
16.00 – 17.00	Project

Thursday 13 May

09.00 - 10.30	Biodiversity governance (<i>Prof. Philippe Le Prestre</i> , to be confirmed)
11.00 - 12.30	Biodiversity governance (<i>Prof. Philippe Le Prestre</i> , to be confirmed)
13.30 – 15.00	Practical (<i>Prof. Philippe Le Prestre</i> , to be confirmed)
15.30 – 16.30	Project
17.00 – 18.00	Evening Seminar: <i>Charles Perrings?</i>

Friday 14 May

09.00 - 10.30	Project presentations
11.00 - 12.30	Project presentations
14.00 - 16.30	Synthesis discussion
17:00	Course Close – bus back to Montreal