

# **BIOL 422**

## **Conservation Biology**

Fall Term (2014-15)

### **CALENDAR DESCRIPTION**

**The application of biological research to the conservation of biodiversity and natural resources, as well as the interaction of biology with philosophy, politics and economics in influencing conservation policy.**

PREREQUISITE BIOL 302/3.0 or BIOL 303/3.0.

### **SCHEDULE**

**Lectures: Monday 10:30-11:30, Wednesday 9:30-10:30, Friday 8:30-9:30. ELLIS 324.**

**Tutorials: Various days and times, please refer to Timetable.**

|                               |   |
|-------------------------------|---|
| <b>Instructor</b>             | <b>Dr. P. Martin</b>  |
| <b>Instructor Contact</b>     | <a href="mailto:pm45@queensu.ca">pm45@queensu.ca</a> Phone: 613-533-6598        |
| <b>Website</b>                | <a href="http://post.queensu.ca/~biol422/">http://post.queensu.ca/~biol422/</a> |
| <b>TA:</b>                    | Please see website.   |
| <b>TA Contact Information</b> | Please see website.   |
| <b>Office Hours</b>           | To be arranged with students.   |

### **Learning Objectives**

The goal of Biology 422 is to provide (i) an introduction and exploration of the field of Conservation Biology, (ii) a critical assessment of conservation issues and solutions, and (iii) hands-on experience in addressing a conservation issue. The course will review the foundations of Conservation Biology, major threats to biodiversity, approaches to solving conservation problems, and societal challenges for conservation. Tutorials will highlight controversial issues in conservation, providing students opportunities to critically assess issues and solutions by applying approaches and concepts discussed in lecture.

By the end of the course, students will be able to:

- A. Explain the major threats to biodiversity, the most important approaches to conserving biodiversity, and the societal challenges that confront conservation.
- B. Think critically and creatively about conservation problems and solutions, recognizing the approaches that work better than others, and the importance of compromise in successful conservation.
- C. Understand how best to address a local conservation issue of their choice.

Students will also learn how to best present scientific material to their peers and to the public in various formats (written, oral presentation).

### **Course Outline**

The course will include four sections:

(1) Foundations of Conservation Biology: What is Conservation Biology? History and Perspectives, What is Biodiversity?, Patterns of Biodiversity, Causes of Variation in Biodiversity, Natural History and Conservation, What is the Value of Biodiversity? A Human Values Perspective, What is the Value of Biodiversity? An Economic Perspective.

(2) Threats to Biodiversity: Habitat Degradation, Loss, and Fragmentation, Overexploitation, Invasive Species, Climate Change, Small Population Size.

(3) Solving Conservation Problems: Conservation Genetics, Conservation Physiology, Species & Landscape Solutions, An Ecosystem Approach to Conservation, Designing and Managing Protected Areas, Restoration Ecology, Sustainable Development, with additional case studies in conservation (e.g., Dusky Seaside Sparrow).

(4) Societal Challenges for Conservation: Environmental Policy, An example: Plan B, The Future of Conservation.

Additional guest lectures will supplement this material by providing more detailed treatment within this framework.

### **Learning Hours**

| <i>Teaching method</i> |                        | <i>Average hours per week</i> | <i>Number of weeks</i> | <i>Total hours</i> |
|------------------------|------------------------|-------------------------------|------------------------|--------------------|
| In-class hours         | Lecture                | 3                             | 12                     | 36                 |
|                        | Seminar                |                               |                        |                    |
|                        | Laboratory             |                               |                        |                    |
|                        | Tutorial               | 3                             | 12                     | 36                 |
|                        | Practicum              |                               |                        |                    |
|                        | Group learning         |                               |                        |                    |
|                        | Individual instruction |                               |                        |                    |
| Other                  | Online activity        | 1                             | 12                     | 12                 |
|                        | Off-campus activity    |                               |                        |                    |
|                        | Private study          |                               |                        |                    |
| Major Research project |                        |                               |                        | 36                 |
| Total hours on task    |                        |                               |                        | 120                |

### **Textbooks/Readings**

Specific articles and other materials will be posted on the course website. The course will follow and refer to: Groom, M., G. Meffe & R. Carroll. 2006. Principles of Conservation Biology, third edition. Sinauer, Sunderland, MA.

### **Grading Scheme**

| Component                                 | Weight (%) | Date                |
|---|------------|---------------------|
| In-Class Quizzes                          | 25         | throughout term     |
| Major Project                             | 40         | throughout term     |
| Tutorial Assignments and Participation    | 25         | throughout term     |
| Project Presentation (in tutorial)        | 5          | latter half of term |
| Semester-long Carbon Emissions Assignment | 5          | throughout term     |

There are no formal exams in this class. See course website for due dates.

### **Grading Method**

All components of this course will be graded using numerical percentage marks. Your course average will then be converted to a final letter grade according to Queen's Official Grade Conversion Scale:

#### *Queen's Official Grade Conversion Scale*

| Grade | Numerical Course Average (Range) |
|-------|----------------------------------|
| A+    | 90-100                           |
| A     | 85-89                            |
| A-    | 80-84                            |
| B+    | 77-79                            |
| B     | 73-76                            |
| B-    | 70-72                            |
| C+    | 67-69                            |
| C     | 63-66                            |
| C-    | 60-62                            |
| D+    | 57-59                            |
| D     | 53-56                            |
| D-    | 50-52                            |
| F     | 49 and below                     |

### **Academic Integrity and Queen's Code of Conduct**

Students are expected to read and understand regulations concerning academic integrity and for ensuring that their assignments and conduct conform to the principles of academic integrity. Departures from academic integrity include plagiarism, use of unauthorized materials, facilitation, forgery and falsification, and are antithetical to the development of an academic community at Queen's. Given the seriousness of these matters, actions which contravene the regulations on academic integrity carry sanctions that can range from a warning or the loss of grades on an assignment to the failure of a course to a requirement to withdraw from the university. Information is available in the Arts and Science Calendar (see Academic Regulation 1 - <http://www.queensu.ca/artsci/academic-calendars/regulations/academic-regulations>), on the Arts and Science website (see <http://www.queensu.ca/artsci/academics/undergraduate/academic-integrity>),

on the Biology website (<http://www.queensu.ca/biology/undergrad/integrity.html>) and from the course instructor.

### **Accommodation Policy, Exam Conflicts, and Other Conflicts**

Important - *If students require special arrangements to meet their academic obligations during the term, please make requests for academic accommodation in writing during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist.* Students who feel they need accommodations for disabilities or extenuating circumstances, or have a conflict between exams or other commitments should consult the Biology Department's website for details about how to proceed (<http://www.queensu.ca/biology/undergrad/integrity.html>). In general, the earlier a course coordinator is apprised of an extenuating circumstance, the more likely an accommodation can be made. Students are encouraged to be proactive in anticipating difficulties, when it is possible to do so.

Students may apply to write a make-up or deferred exam if they have an exam conflict as defined in the Academic Regulations of the Faculty (See Arts and Science Calendar Regulation 8 - <http://www.queensu.ca/artsci/academic-calendars/regulations/academic-regulations>). In this case, the student should report to the Exams Office first to verify that there is a genuine exam conflict. Biology professors will not consider your situation to be a conflict unless it meets the criteria set out by the Faculty of Arts and Sciences. Students may request a make-up or deferred exam if they have an exam conflict with off-campus travel associated with a field course (e.g. BIOL-307/3.0 or 407/3.0) that is held during the fall or winter terms.

### **Accommodation of Disabilities**

*Queen's University is committed to achieving full accessibility for persons with disabilities. Part of this commitment includes arranging academic accommodations for students with disabilities to ensure they have an equitable opportunity to participate in all of their academic activities. If you are a student with a disability and think you may need accommodations, you are strongly encouraged to contact the Disability Services Office (DSO) and register as early as possible. For more information, including important deadlines, please visit the DSO website at: <http://www.queensu.ca/hcds/ds/>*

### **Copyright**

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