

BIOL 111

Ecology and the Environment

Winter Term (2016-17)

CALENDAR DESCRIPTION

Introduces the basic concepts of ecology and shows how they relate to environmental issues such as population growth, resource management, biodiversity, agriculture, air and water pollution, energy, and climate change, and to solutions leading to a sustainable environment.

NOTE: Also offered online. Consult Continuing and Distance Studies.

LEARNING HOURS 108 (36L;72P)

ONE-WAY EXCLUSION May not be taken with or after BIOL 302/3.0; BIOL 303/3.0.

SCHEDULE

Refer to SOLUS for details

| | |
|-------------------------------|---|
| Instructor | Dr. Peter Boag |
| Instructor Contact | boagp@queensu.ca Phone: 613-533-6394 |
| Office Hours | Mo 930-1030, Tu 1130-1230, We 130-230, Th 1030-1130 & 1:30-2:30 (or by appointment) |
| TA: | TBA |
| TA Contact Information | TBA |
| Office Hours | TBA |

Learning Objectives

1. You should have a good understanding of basic ecology and be able to discuss the basic principles pertaining to community ecology and population ecology.
2. You should have a good understanding of the characteristics of the earth's biomes and the factors that influence them.
3. You should be able to explain the different factors that affect human population ecology in developed and developing countries.
4. You should be able to describe the earth's renewable and non-renewable resources, their current status, the factors that influence them and the things humans have to do to use them in more sustainable ways.
5. You should be able to discuss current environmental problems and their potential solutions.

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 | | | |
| | Practicum | | | |
| | Group learning | | | |
| | Individual instruction | | | |
| O | Online activity | 1 | 12 | 12 |

| | | | | |
|---------------------|---------------------|---|----|-----|
| | Off-campus activity | | | |
| | Private study | 5 | 12 | 60 |
| Total hours on task | | | | 108 |

Course Outline

Topics covered include a general introduction to environmental problems, ecosystems, evolution and biodiversity, climate and terrestrial biodiversity, aquatic biodiversity, community ecology, population ecology, the human population, sustaining biodiversity: ecosystem and species approaches, food and soil resources, water resources, non-renewable energy resources, energy efficiency and renewable energy, climate change and ozone loss, air pollution, water pollution and sustaining human societies.

Textbooks/Readings

Required text: Miller, G.T. and D. Hackett. 2014. *Living in the Environment* (3rd Canadian ed). Nelson.
Additional readings will be available via Moodle or web site.

Grading Scheme

| Component | Weight (%) | Date |
|----------------------|-------------------|-------------|
| Midterm | 23 | TBA |
| Quizzes (approx. 10) | 19 | All term |
| Final exam | 40 | TBA |
| Project/term paper | 18 | TBA |

Grading Method

In this course, some components will be graded using numerical percentage marks. Other components will receive letter grades, which for purposes of calculating your course average will be translated into numerical equivalents using the Arts and Science Letter Grade Input Scheme. When letter grades are employed, the following scale will be employed for purposes of calculating your course average:

Arts & Science Letter Grade Input Scheme

| Assignment mark | Numerical value for calculation of final mark |
|------------------------|--|
| A+ | 93 |
| A | 87 |
| A- | 82 |
| B+ | 78 |
| B | 75 |
| B- | 72 |
| C+ | 68 |
| C | 65 |
| C- | 62 |
| D+ | 58 |
| D | 55 |
| D- | 52 |
| F48 (F+) | 48 |
| F24 (F) | 24 |
| F0 (0) | 0 |

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 responsible for familiarizing themselves with the regulations concerning academic integrity and for ensuring that their assignments and conduct conform to the principles of academic integrity. 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>), and at Biology's website (<http://biology.queensu.ca/academics/undergraduate/prepare-yourself/>) and from the instructor of this course. 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.

Accommodation Policy, Exam Conflicts, and Other Conflicts

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://biology.queensu.ca/academics/undergraduate/prepare-yourself/>). 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.

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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 Queen’s Student Accessibility Services (QSAS) and register as early as possible. For more information, including important deadlines, please visit QSAS at: <http://queensu.ca/studentwellness/>