

**FACULTY OF SCIENCE
Department of Biology
Course Outline**

**SC/BIOL 2050 4.00 Ecology
Fall 2014**

GENERAL INFORMATION

COURSE

DESCRIPTION: A study of the interactions between organisms and their abiotic environments, presented in an evolutionary context. Includes processes of evolution, ecosystems and communities, competition, predation, population ecology and current environmental problems such as habitat loss and extinction.

PREREQUISITES SC/BIOL 1010 6.00 or SC/BIOL 1000 3.00 & SC/BIOL 1001 3.00
Co requisite SC/BIOL 2060 3.00.
Course credit exclusion: SC/BIOL 2050 3.00.

COURSE

DIRECTOR: Dr. Christopher J. Lortie

SCHEDULE: Lectures: Friday 8:30am 180 minutes in VC 135
Labs: M-F 2:30pm 180 minutes LUM 117 or 118

EVALUATION:

<u>Lecture component</u>	
Lecture test	20%
Lecture test	20%
Essay in lecture	10%
<u>Lab component</u>	
Datasets with meta-data & methods x 3 (5% each)	15%
Experimental design	5%
Lab report	20%
Critical thinking exercise	10%

Final course grades may be adjusted to conform to Program or Faculty grades distribution profiles.

IMPORTANT

DATES:

Lectures

Oct 10 th , 2014.	Lecture test
Nov 14 th , 2014.	Lecture test
Dec 5 th , 2014.	In-class essay

Labs

Technique datasets due one week after lab due on same day by 230pm	
Nov 3-7 th , 2014.	Independent dataset due in lab by 230pm
Nov 17-21, 2014.	Lab report due in lab by 230pm
Dec 1-5 th , 2014.	In-lab critical thinking exercise

Note: for additional important dates such as holidays, refer to the "Important Dates" section of the Registrar's Website at <http://www.yorku.ca/yorkweb/cs.htm>

INSTRUCTOR CONTACT INFORMATION

Lectures: Dr. Lortie, lortie@yorku.ca Labs: Chris Luszczyk, luszczyk@yorku.ca
Please contact instructor and lab administrator directly to book appointments for office hours.

RESOURCES

Lecture material	Slides provided by instructor
Textbook	Cain et al. Ecology textbook. Third Edition.
Lab manual	http://bit.ly/practical-ecolabs
Readings	Provided by instructor and teaching assistants
Software	Open source: figshare.com and plot.ly and Excel

LEARNING OUTCOMES

Upon successful completion of this course, students should be able to:

- (1) Summarize the salient principles associated with the major research topics in ecology.
- (2) Critically assess the primary and second research literature in the environmental sciences.
- (3) Link ecological principles to contemporary environmental issues.
- (4) Critically write a balanced, evidence-based essay on global ecology and the environment.
- (5) Interpret ecological figures and datasets published in the primary literature.
- (6) Publish data with meta-data.
- (8) Effectively communicate field ecology methodology.
- (9) Design an ecological field experiment.
- (10) Apply critical thinking skills to a bibliographic workflow and ecological syntheses.

COURSE CONTENT

The main purpose of the lectures is to develop the declarative knowledge you need for the environmental sciences and upper-year courses. Lectures will thus provide you with a solid ecological schema of principles for the environmental sciences. The labs will provide you with procedural knowledge of the skills and macro-procedures you will need for eco/evo/environmental research.

There are three modules in the lectures including the following:

- (i) individuals & evolution
- (ii) interactions & communities
- (iii) global patterns in the environment.

In the labs, there are four independent modules including the following:

- (i) techniques & data
- (ii) experimental design
- (iii) big data
- (iv) critical thinking skills.

TEACHING INNOVATIONS

Experiential education. Student will be provided with hands-on, highly practical field and lab experience in ecological methodologies, experimental design, and data handling. In the lectures, there will be a focus on critical thinking and deconstructing the principles of ecology from research. Students will also have experience with literature searches and effective topic and hypothesis delineations.

E-learning. Students will be provided with the opportunity to explore data repositories and evaluated on use of data sharing tools. Twitter and a discussion blog will also be used to facilitate open discovery and connection of principles. Students will also be provided with the opportunity to further research skills using online bibliographic databases.

OTHER INFORMATION

EXPECTATIONS

Attendance is expected because the lectures will provide an opportunity for the students not only to listen to summary lectures of the readings by the professor but to also engage in critical thinking discussions on the principles of ecology. In the lectures, we will work together to design many of the test questions (but not the answers). All information presented in class including information not provided on lecture slides and the additional resources is testable.

COURSE POLICIES

If the in-class tests/essay are missed for a valid, well documented reason, a requirement to petition for an alternative, 'make-up' exercise will be considered if the following conditions are met (1) the course director is notified within one week of the evaluation, and (2) all relevant documentation is provided within one week in person at the next lecture. Alternative assignments/evaluations are not available in the lab component of the course. The data with meta-data and methods are a form of participation to recognize the efforts of students that keep up to date on their research and work. If the teaching assistant and lab administrator are notified within one week and relevant documentation is also provided at the time, the lab administrator will note the valid absence from submission of lab work and your lab component will be differentially weighted to avoid penalty for valid absence. However, to complete the course, you must complete at least 30% of each of the evaluations in the lab and lecture work.

To promote fairness and student responsibility, all in class exercises are due on the dates specified on the course website. A 20% penalty will be applied for each day the exercise is late. Students who anticipate being unable to submit the exercises on the due date are encouraged to submit early.

Grades on exercises and exams are not negotiable. Every reasonable action is made to ensure multiple assessments of the assignments before conveying grades to assure consistency across the entire class. Thus, the course director should only be contacted if there is calculation or clerical error present.

Students are not allowed to record lectures or lab tutorials using their own devices.

UNIVERSITY POLICIES

1. 1. Students who miss the final exam and would like an opportunity to write it must request and obtain deferred standing. A Deferred Standing Agreement form must be completed and submitted with appropriate supporting documentation (such as an Attending Physician's Statement for illness) to the professor or Biology Undergraduate Office. Senate Policy requires that "Normal requests for deferred standing must be communicated within one week following a missed examination, or on the last day to submit course work". The policy and forms for obtaining deferred standing may be found at <http://www.registrar.yorku.ca/exams/deferred/index.htm>
1. 2. All students are expected to familiarize themselves with the following information, available on the Senate Committee on Academic Standards, Curriculum & Pedagogy webpage (see Reports, Initiatives, Documents) -
http://www.yorku.ca/secretariat/senate_cte_main_pages/ASCP.htm
<http://www.yorku.ca/secretariat/senate/committees/ascp/documents/CourseInformationForStudentsAugust2012.pdf>
 - • Senate Policy on Academic Honesty and the Academic Integrity Website
 - • Course accommodation for students with disabilities, including physical, medical, systemic, learning and psychiatric disabilities
 - • Student Conduct Standards
 - • Religious Observance Accommodation