

Department of Biology Course Outline

SC/BIOL 4700 3.00 Current Topics in Environmental Biology
Winter 2021

Course Description

A review of recent advances in environmental biology with an emphasis on current research, experimental design and biological methods. This includes (but is not limited to): environmental stressors, population ecology, community ecology, behavioural ecology, paleoecology, population genetics, physiology, aquatic ecology, terrestrial ecology, quantitative ecology, and environmental management.

Three lecture hours per week. One term. Three credits.

Prerequisites

Prerequisites: SC/BIOL 2050 4.00 and SC/BIOL 2060 3.00.

Course Instructors and Contact Information

Instructor: Dr. Sapna Sharma

Office: Room 326, Lumbers Building

Email: sharma11@yorku.ca

Office Hours: Please email to set up an appointment

Teaching Assistant: Kyra Fine

Email: kyrafine@yorku.ca

Schedule

Mondays from 2:30 pm -3:45 pm

Thursdays from 8:30 am -9:45 am

Zoom Meetings:

Monday Classes: 2:30-3:45 pm

Join Zoom

Meeting <https://yorku.zoom.us/j/97305880285?pwd=SHRsWXc0ZENTRUo2bmMwTldZTGhaZz09>

Meeting ID: 973 0588 0285; Passcode: 053423

Thursday Classes: 8:30 -9:45 am

Join Zoom

Meeting <https://yorku.zoom.us/j/95836003421?pwd=RGJNUXlpaHZitOOFZqWDJCd1UxQT09>

Meeting ID: 958 3600 3421 Passcode: 283873

Find your local number: <https://yorku.zoom.us/j/abXBQzdi0L>

Evaluation

Written Critique: 20%
Oral Presentation: 20%
Comprehension Test: 20%
Term Project Paper: 40%

The test will be administered through eClass or Crowdmark. It will be open book, but collaboration between students will not be permitted. There will be one written make-up test scheduled on April 8th at 8:30 am (please see course policy section for more details).

Important Dates

Important Date: March 12, 2020: Drop deadline without receiving a grade

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>

Resources

Required and Recommended Reading: There is no required textbook for the course. However, there will be required and recommended reading from the primary and secondary literature which will be assigned to students each week. Required and recommended readings will be made available prior to each class.

Learning Outcomes

The 'capstone' course prepares students to be a practicing environmental biologist exposing students to cutting-edge experimental design, methodology, and recent advances in environmental biology. The course will include group discussions, research seminars, critiques of research articles in the primary literature, and traditional lectures. In this course, students will (but not limited to):

- i. develop critical thinking and problem-solving skills
- ii. develop effective written and oral communication skills
- iii. gain an understanding of the research methods in biology that enable the student to effectively evaluate the appropriateness of different established strategies/techniques to solve problems
- iv. gain an awareness of current issues in environmental biology
- v. gain the ability to effectively design and implement environmental biology research projects

Course Content

Date	Topic	What's Due?
11-Jan	Introduction	
14-Jan	How to read a paper	
18-Jan	Lake ice in a changing climate; How to write a critique	
21-Jan	Lake ice in a changing climate	
25-Jan	Aquatic Invasive Species	
28-Jan	Aquatic Invasive Species	Oral Presentation 1
01-Feb	Long-term ecological research	Critique Due
04-Feb	Long-term ecological research	Oral Presentation 2
08-Feb	Climate change, fisheries, and habitat	
11-Feb	Climate change, fisheries, and habitat	Oral Presentation 3
15-Feb	Family Day, NO CLASS	
18-Feb	Reading Week, NO CLASS	
22-Feb	Species distributions under climate change	
25-Feb	Species distributions under climate change	Oral Presentation 4
01-Mar	Global lake responses to climate change	
04-Mar	Global lake responses to climate change	Oral Presentation 5
08-Mar	How to apply for research positions/graduate school	
11-Mar	Reading comprehension test	Test
15-Mar	Freshwater species-at-risk; Applying for federal jobs	
18-Mar	Freshwater species-at-risk	Oral Presentation 6
22-Mar	Open-access Data Synthesis	
25-Mar	Open-access Data Synthesis	Oral Presentation 7
29-Mar	How to apply for a job?	
01-Apr	Phenology and Extreme Events	
05-Apr	How to analyze long-term ecological data	
08-Apr	Data Analysis Tutorial	Final Project Due

Experiential Education and E-Learning

The assignments covered in class all represent assignments one might do as a practitioner in an Environmental Biology career, including: conveying scientific information critically and concisely both orally and in writing, conducting public outreach, and undertaking an independent research project that may lead to a conference presentation and scientific publication. Students will learn how to access and submit scientific information online. Students will also obtain networking experiences with practitioners in the field.

Other Information

Special Circumstances: Students who feel that there are circumstances that may interfere with their ability to successfully complete the course requirements are encouraged to discuss the matter with the Course Instructor as soon as possible.

Technical Requirements: You must have access to reliable high-speed internet connection (wi-fi) and a computer in order to take this course, including access to audio (including microphone) and a web cam. Some aspects of the course will involve video conferencing software (e.g. Zoom). Exams and other assessments may be conducted with the aid of an online proctoring service such as Proctortrack.

Reliable access to eClass and ability to stream videos from eClass are required.

All sessions will be synchronous. Only lectures will be recorded. To protect the privacy of students, presentation or discussion activities will not be recorded or posted online.

Course Policies

Written Assignments: Students must submit assignments to the Course Instructor at the beginning of the class session. Please inform the Course Instructor 24 hours prior to the deadline of an extenuating circumstance that prevents the submission of the written assignment.

Oral Presentations: One or more students will present an oral presentation and facilitate discussion in each class. Unfortunately, if a student misses their presentation date, the class cannot run effectively. Therefore, every student has a responsibility to present and facilitate discussions on their chosen date. If the student misses their presentation, they will receive a mark of 0 on the assignment. Students should meet with the Course Instructor prior to their presentation date to ask questions and solicit feedback.

Participation: Your participation is important to the success of the course.

Missed Exam

You **MUST** email your Instructor at sharma11@yorku.ca within 24 hours of missing the test (the sooner the better).

Where appropriate and possible, one makeup test will be scheduled on April 8th at 8:30 am. The makeup test may differ in format from the original test (*i.e.*, include more short/long answer questions). If the makeup test is missed, makeup oral examinations will be scheduled during the examination period.

In order to be fair and consistent with regards to the entire class, individual grades are not negotiable. Contact the Instructor about marks **ONLY** if there is a clear error in your grade (calculation, clerical, etc.) within ONE week of the test score being made available to you.

Error policy: The instructor reserves the right to amend or correct the course outline.

University Policies

Academic Honesty and Integrity

York students are required to maintain the highest standards of academic honesty and they are subject to the Senate Policy on Academic Honesty (<http://secretariat-policies.info.yorku.ca/policies/academic-honesty-senate-policy-on/>). The Policy affirms the responsibility of faculty members to foster acceptable standards of academic conduct and of the student to abide by such standards.

There is also an academic integrity website with comprehensive information about academic honesty and how to find resources at York to help improve students' research and writing skills, and cope with University life. Students are expected to review the materials on the Academic Integrity website at - <http://www.yorku.ca/academicintegrity/>

Access/Disability

York University is committed to principles of respect, inclusion and equality of all persons with disabilities across campus. The University provides services for students with disabilities (including physical, medical, learning and psychiatric disabilities) needing accommodation related to teaching and evaluation methods/materials. These services are made available to students in all Faculties and programs at York University.

Student's in need of these services are asked to register with disability services as early as possible to ensure that appropriate academic accommodation can be provided with advance notice. You are

encouraged to schedule a time early in the term to meet with each professor to discuss your accommodation needs. Please note that registering with disabilities services and discussing your needs with your professors is necessary to avoid any impediment to receiving the necessary academic accommodations to meet your needs.

Additional information is available at the following websites:

Counselling & Disability Services - <http://cds.info.yorku.ca/>

Counselling & Disability Services at Glendon - <http://www.glendon.yorku.ca/counselling/personal.html>

York Accessibility Hub - <http://accessibilityhub.info.yorku.ca/>

Ethics Review Process

York students are subject to the York University *Policy for the Ethics Review Process for Research Involving Human Participants*. In particular, students proposing to undertake research involving human participants (e.g., interviewing the director of a company or government agency, having students complete a questionnaire, etc.) are required to submit an *Application for Ethical Approval of Research Involving Human Participants* at least one month before you plan to begin the research. If you are in doubt as to whether this requirement applies to you, contact your Course Director immediately.

Religious Observance Accommodation

York University is committed to respecting the religious beliefs and practices of all members of the community, and making accommodations for observances of special significance to adherents. Should any of the dates specified in this syllabus for an in-class test or examination pose such a conflict for you, contact the Course Director within the first three weeks of class. Similarly, should an assignment to be completed in a lab, practicum placement, workshop, etc., scheduled later in the term pose such a conflict, contact the Course director immediately. Please note that to arrange an alternative date or time for an examination scheduled in the formal examination periods (December and April/May), students must complete an Examination Accommodation Form, which can be obtained from Student Client Services, Student Services Centre or online at <https://secure.students.yorku.ca/pdf/religious-accommodation-agreement-final-examinations.pdf>

Student Conduct in Academic Situations

Students and instructors are expected to maintain a professional relationship characterized by courtesy and mutual respect. Moreover, it is the responsibility of the instructor to maintain an appropriate academic atmosphere in the classroom and other academic settings, and the responsibility of the student to cooperate in that endeavour. Further, the instructor is the best person to decide, in the first instance, whether such an atmosphere is present in the class. The policy and procedures governing disruptive and/or harassing behaviour by students in academic situations is available at - <http://secretariat-policies.info.yorku.ca/policies/disruptive-and-or-harassing-behaviour-in-academic-situations-senate-policy/>