

Biology 9400: Ecology & Evolution Graduate Course

Course information: Classes (3 hours) will be held weekly during the fall term. The precise dates are TBD. An organizational meeting will be held in early September (date and location TBD). Classes will follow a flipped classroom approach consisting of student-led presentations and discussions.

Max enrolment: 12 per section, 1 or 2 sections

Professor: Fall 2024: Professor Amanda Moehring <amoehrin@uwo.ca>

Course Description: Rapid biodiversity loss and climate change are the two leading major problems facing humanity today. In order to inform societal action to address these problems, we will need to draw on ecological and evolutionary theory. In this course, students will engage in deep reading and discussion of major topics in ecological and/or evolutionary theory, including those that are foundational, impactful, and/or of emerging importance. Students will be assigned to discussion groups of 3-6 students where they will build up a resource library for the course, prepare two seminars, and lead subsequent discussions.

Course Materials: Course materials will all be provided on the course OWL page.

Methods of Evaluation: Students will be graded individually on two seminars (worth 35% each). They will also receive a group mark for their overall level of preparation and their ability to lead the group discussion (15%). Lastly, an individual mark will be given for participation and engagement in the seminars led by others (15%).

For each seminar, students leading the seminar for the day will prepare a 2-page handout ('cheat sheet') where they will: 1) provide a list of 8-10 key papers, 2) select 2 papers from the list for the class to read, 3) provide a rationale for the two papers that were chosen, and 4) lead the class seminar with a combination of lecture, discussion, and active learning. Specifically, students will aim for the seminar to:

1. Critically assess the significance/impact of the chosen research on our understanding of biology, as well as its potential impact on society in general in the years to come.
2. Critically assess the limitations/caveats associated with the relevant experimental approaches/methodologies.

The instructor will provide guidance on the topic and format of the seminars. Weekly participation goes beyond mere attendance, and will be determined by a student's level of engagement and contribution to discussion (oral and written) throughout the semester.

Additional details

-offered each year

- 6-12 students: 1 faculty member
- 13-20 students: 2 faculty members
- faculty instructors serve as coordinators and facilitators
- students assigned to groups of 3-6 from different research groups and program stages
- postdocs invited to serve as facilitators
- faculty come up with list of topics from a broader set, in consultation with students

Ideas for topics*

Population genetics/genomics
Conservation genetics or conservation biology
Speciation
Phylogenetics
Rapid adaptation
Sexual selection
Social evolution
Community ecology
Ecosystem ecology
Eco-evolutionary theory
Disease ecology
Species co-existence
Bioenergetics
Invasion ecology
Biogeography
Ecological models
Global change biology

*only a subset would be selected in any given year, depending on instructor and student interest

Academic Offences: Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, at the following web site:

http://www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_grad.pdf

Statement on Gender-Based and Sexual Violence: Western is committed to reducing incidents of gender-based and sexual violence (GBSV) and providing compassionate support to anyone who is going through or has gone through these traumatic events. If you are experiencing or have experienced GBSV (either recently or in the past), you will find information about support services for survivors, including emergency contacts at the following website:

https://www.uwo.ca/health/student_support/survivor_support/get-help.html

To connect with a case manager or set up an appointment, please contact support@uwo.ca.