

Course outline for IBIO*6020
Advances in Evolutionary Biology
University of Guelph, Winter 2014
1:00-3:50 F
SCIE 3440

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Office hours by appointment. I encourage you to e-mail or see me after class if you need to talk.

Course Description

This modular course reviews books and/or other publications in the field of evolutionary biology, providing knowledge of progress in this area of biology. Topics may include epigenetics, phylogenetics, developmental basis of evolutionary change, and molecular evolution. The course includes lectures and seminars in which the students participate. Offered annually.

During the Winter 2014 offering of this class, we will work together as a group to produce a meta-analysis of estimates of phenotypic selection in natural or artificial populations (for examples see Kingsolver et al. 2001 in *American Naturalist*, Siepielski et al. 2009 in *Ecology Letters*). To accomplish this we will:

1. Read and discuss papers on techniques for estimating phenotypic selection and conducting meta-analyses, as well as published examples of meta-analyses.
2. Decide on the focus of our meta-analysis. This will be tailored to the interests of the group.
3. Collect data for our meta-analysis from the literature and publically available databases.
4. Analyze the data.
5. Write a group paper describing our results.

Tentative schedule of meetings

Week of January 6: Crash course in methods for estimating phenotypic selection.

Week of January 13: Turn in problem set. Read and discuss published meta-analyses of phenotypic selection. Begin brainstorming ideas for group meta-analysis.

Week of January 20: Read and discuss papers describing the how and why of meta-analysis. Continue brainstorming ideas for group meta-analysis.

Week of January 27: Read and discuss published meta-analyses of phenotypic selection. Finalize topic for group meta-analysis. Devise plan for searching the literature and coding in studies.

Week of February 3: Read and discuss papers related to topic for group meta-analysis. Report on progress on coding in studies.

Week of February 10: Read and discuss papers related to topic for group meta-analysis. Report on progress on coding in studies.

Week of February 17: No meeting

Week of February 24: Read and discuss papers related to topic for group meta-analysis. Group conference to resolve any discrepancies in coding.

Week of March 3: Read and discuss papers related to topic for group meta-analysis. Group conference to plan data analysis.

Week of March 10: Read and discuss papers related to topic for group meta-analysis. Work on data analysis. Plan manuscript writing.

Week of March 17: Read and discuss papers related to topic for group meta-analysis. Group conference to discuss data analysis.

Week of March 24: Read and discuss papers related to topic for group meta-analysis. Report on manuscript writing.

Week of March 31: Group discussion and critique of manuscript draft.

April 18: Final version of group manuscript due by 5:00 PM

Course Requirements and Grading Guidelines

Your grade for the course will be based on the following:

1. Problem set on estimating and interpreting phenotypic selection (20%)
2. Leading class discussion (20%): You will lead one week's discussion, either alone or with a fellow student (depending on enrollment). Leaders will be responsible for providing a printed list of questions for discussion and guiding the discussion.
3. Contribution to coding in studies (30%)
4. Contribution to manuscript writing (30%)

E-mail Communication

As per university regulations, all students are required to check their <uoguelph.ca> e-mail account regularly: e-mail is the official route of communication between the University and its students.

When You Cannot Meet a Course Requirement

When you find yourself unable to meet an in-course requirement because of illness or compassionate reasons, please advise the course in writing, with your name, id#, and e-mail contact. See the graduate calendar for information on regulations and procedures for Academic Consideration:

http://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/sec_d0e1400.shtml

Drop Date

The last date to drop one-semester courses, without academic penalty, is March 7 2014. Two-semester courses must be dropped by the last day of the add period in the second semester. Refer to the Graduate Calendar for the schedule of dates:

<http://www.uoguelph.ca/registrar/calendars/graduate/current/sched/sched-dates-f10.shtml>

Academic Misconduct

The University of Guelph is committed to upholding the highest standards of academic integrity and it is the responsibility of all members of the University community – faculty, staff, and students – to be aware of what constitutes academic misconduct and to do as much as possible to prevent academic offences from occurring. University of Guelph students have the responsibility of abiding by the University's policy on academic misconduct regardless of their location of study; faculty, staff and students have the responsibility of supporting an environment that discourages misconduct. Students need to remain aware that instructors have access to and the right to use electronic and other means of detection. The Academic Misconduct Policy is detailed in the Graduate Calendar:

http://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/sec_d0e1687.shtml

Recording of Materials

Presentations which are made in relation to course work—including lectures—cannot be recorded in any electronic media without the permission of the presenter, whether the instructor, a classmate or guest lecturer.

Resources

The Graduate Calendar is the source of information about the University of Guelph's procedures, policies and regulations which apply to graduate programs:

<http://www.uoguelph.ca/registrar/calendars/graduate/current/>