

Ecology 8000: Topics in Modern Ecology

Fall, 2018

Course details

Meeting time and place: 12:30 - 2:00 pm, Tuesday and Thursday, Ecology room #12

Instructors:

Ford Ballantyne - Lead (fb4@uga.edu), Craig Osenberg - Module 1 Lead (osenberg@uga.edu), Richard Hall - Module 2 Lead (rjhall@uga.edu), Ford Ballantyne - Module 3 Lead, Ricardo Holdo - Module 4 Lead (rholdo@uga.edu)

Teaching assistants:

Michelle Evans (mvevans@uga.edu), Robbie Richards (robert.richards@uga.edu)

Course webpage: <http://courses.ecology.uga.edu/ecol8000-fall2018/>

Overarching goals

This course will provide an introduction to the practice of Ecology as a basic science. You will be immersed in discussions, exercises and activities that will force you to think about ecological questions and concepts from multiple perspectives, across scales and levels of organization. This will not be a survey of Ecology, but rather an opportunity to become more comfortable and facile addressing challenging questions in Ecology.

Course organization and assignments

The course will be divided into 4 modules with transition days between modules.

What to expect in a module

Some combination of the following:

- Discussing primary literature
- Small group activities that require in class and out of class work
- Working with real data
- Formulating and analyzing models
- Short writing assignment, e.g. recommendation for management, short proposal
- Designing an experiment
- Debate
- Peer evaluation

What we expect of you

- Active engagement in discussions and full participation in group work, in and out of class
- Thorough reading of assigned papers
- A constructive and considerate, but critical attitude
- Completion of short research project before the start of the third module
 - The research project can be conducted during the field trip (strongly encouraged)
 - The research project can be conducted independently if you opt out of the field trip
- A short paper in the form of a Synthesis or Review, due at the end of the semester

First day (8/14): Introduction

A brief overview of the course, introductions, 3 questions discussion.

Module 1 (8/16-9/4): Inference and ecological controversies

This module will focus on making inference in ecology. We will emphasize examples in which controversies exist, in part, because of the application of inferential tools and associated assumptions. As the first module of the course, we also will stress skills required to critically read the literature and effectively lead and participate in discussions.

Module 2 (9/11-9/28): Ecological modeling

This module will focus on what mathematical models are (and aren't) useful for, some common terminology associated with most formal models, and understanding and underlying assumptions. We will build some models, refine them, and perform elementary analysis of their behavior (e.g. graphs, equilibrium and stability).

Field Trip (10/5-10/7): Coweeta Hydrologic Laboratory in NC

On the field trip, you will conceive, conduct, and present the results from a study at Coweeta.

Module 3 (10/9-10/25): Mutualisms

This module will focus on how life history trade-offs influence trait evolution and how mutualistic syndromes arise and persist in the context of species interactions. We will emphasize the role of evolution in shaping species interactions, being mindful of the differences between interactions at the individual and population levels.

Module 4 (11/1-11/27): Community structure and assembly across scales

This module will focus on the role of niche vs. neutral processes in community assembly, and explore how analyses of diversity across scales in observational datasets may be used to make inferences about mechanisms structuring ecological communities.

As a University of Georgia student, you have agreed to abide by the University's academic honesty policy, A Culture of Honesty, and the Student Honor Code. All academic work must meet the standards described in A Culture of Honesty found at: <https://ovpi.uga.edu/academic-honesty/academic-honesty-policy>. Lack of knowledge of the academic honesty policy is not a reasonable explanation for a violation. Questions related to course assignments and the academic honesty policy should be directed to the instructor.

Special needs: Students with disabilities or health related issues who may need class accommodation should consult with the instructor as soon as possible. Accommodations cannot be provided until a student has gone through The Disability Resource Center (DRC) (<http://drc.uga.edu/about/registerforservices.php>; 542-8719) and we have discussed appropriate accommodations for this course. Accommodations cannot be provided retroactively. All conversations will be strictly confidential.

The course syllabus is a general plan for the course; deviations announced to the class by the instructor may be necessary.