Ecology 8000: Topics in Modern Ecology - Fall 2019

**Course details**

Meeting time and place 2:00 – 3:30 pm, Tuesday (Ecology room #12, Conference room) and Thursday (Ecology room #123, Park/Hall conference room)

Instructors

JP Schmidt - Lead (jps@uga.edu)

Craig Osenberg - Module 1 Lead (osenberg@uga.edu)

Nina Wurzburger - Module 2 Lead (ninawurz@uga.edu)

Rico Holdo - Module 3 Lead (rholdo@uga.edu)

JP Schmidt - Module 4 Lead

Teaching assistants

Kaylee Arnold (kaylee.arnold@uga.edu), Robbie Richards (robert.richards@uga.edu)

Course webpage:<http://courses.ecology.uga.edu/ecol8000-fall2019/>

**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 can't attend the field trip

- A short paper in the form of a Synthesis or Review, due at the end of the semester

**Schedule**

First day (8/15): **Introduction**

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

Module 1 (8/20-9/5): **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 (9/12-10/01): **Biodiversity and ecosystem function**

This module will explore the links between biodiversity and the ecosystem. We will discuss the history (and the controversy) of this topic and the mechanisms that mediate the BEF relationship. We will then analyze datasets of diversity and ecosystem function to test hypotheses and to inspire experimental studies.

Field Trip (10/10-10/29): **Coweeta Hydrologic Laboratory in NC**

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

Module 3 (10/15-10/31): **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.

Module 4 (11/7-11/26): **Ecological modelling**

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).

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**Academic honesty** As a University of Georgia student, you have agreed to abide by the University’s academic honesty policy, ACulture of Honesty, and the Student Honor Code. All academic work must meet the standards described inA Culture of Honesty found at: https://ovpi.uga.edu/academic-honesty/academic-honesty-policy. Lack ofknowledge 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.

**Diversity** Diversity encompasses acceptance and respect. The term "diversity" encompasses differences ofculture, background and experience among individuals and groups. Such differences include, butare not limited to, differences of race, ethnicity, national origin, color, gender, sexual orientation,gender identity, age, and abilities, as well as political and religious affiliation and socioeconomicstatus. The College of Family and Consumer Sciences at the University of Georgia embraces acommitment to diversity by modeling for the state and nation, a community of individuals andprograms which seek to reduce prejudice, disparities, and discrimination and build a supportiveenvironment for all. More about diversity can be found:<http://www.fcs.uga.edu/college/diversity>.

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