

I. Course Information

Course Number:	Ecol 8310
Course Name:	Population Ecology
Meeting time:	Tuesdays and Thursdays, 9:30-11:30am
Format:	Lecture and discussion
Location:	Ecology 117

II. Readings

Recommended readings	<p>I expect you to read about topics prior to each lecture. This information can be obtained from multiple sources, such as the web or books intended for advanced (graduate) courses in ecology. I recommend you pull from several different books, each of which is an invaluable resource for professional ecologists:</p> <ul style="list-style-type: none">• Mittelbach, GG. 2012. Community Ecology. Sinauer.• Case, TJ. 2000. An Illustrated Guide to Theoretical Ecology. Oxford.• Gotelli, NJ. 2008. A Primer of Ecology. Sinauer.• Vandermeer, JH and DE Goldberg. 2003. Population Ecology. Princeton.• Gurney WSC and RM Nisbet. 1998. Ecological Dynamics. Oxford.
Required readings	<p>Papers from the primary literature will be assigned to accompany lectures and provide the focus for student-led discussions.</p>

III. Course Description and Design

This course provides an advanced view of the concepts that underlie the spatial and temporal dynamics of populations and the communities within which they are embedded. Topics to be covered will include population growth and regulation, species interactions, eco-evo dynamics, foodwebs, patterns of diversity.

We will study population and community ecology, as revealed through mathematical and graphical analyses and empirical investigations. Lectures will emphasize concepts and models. Readings from the primary literature will facilitate the students' abilities to critically evaluate the primary literature. Discussions will be student-led and will enhance the students' communication skills and their abilities to assess and debate relative merits of different ideas and approaches. During each discussion, which will last approximately 45 minutes, you will give a 10 minute introductory presentation (laying out history and context for the paper; highlighting major findings; setting up the foundation for the discussion); and then launching into and facilitating a 30-40 minute discussion involving the entire class.

IV. Pre-requisites and Co-requisites

All participants are expected to have had an undergraduate course in ecology. The course targets graduate students with focal interests in ecology who are in their first or second year of graduate work at UGA; advanced undergraduates also are welcome to enroll.

V. Instructor

This course is taught by:

Craig W. Osenberg, Odum School of Ecology, 25 Ecology Bldg. (osenberg@uga.edu)

Craig has not scheduled formal office hours. Please drop by his office or email him for an appointment.

VI. Course Overview and Schedule

Lecture topics for this course are listed below. A more detailed schedule with assigned readings will also be made available and updated over the course of the semester.

Week	Lecture Topics (very rough)
1	Introduction to population growth, population regulation; effects of demographic and environmental variation.
2	Structured-population dynamics
3	Evolutionary dynamics; life histories
4	Game theory; optimality
5	Metabolic theory; macro-ecology
6	Metapopulations and spatial patterns
7	Competition and R*
8	Foraging theory; predation; herbivory.
9	Disease ecology
10	Co-evolutionary dynamics; Eco-evo dynamics
11	Indirect effects, trophic cascades
12	Higher order interactions, trait-mediated interactions
13	Invasive species
14	Drivers of biodiversity; coexistence
15	Biodiversity and ecosystem function

VII. Expectations and Philosophy

My Responsibilities: As the instructor of this course, I will endeavor to help you understand the fundamental concepts of population and community ecology. I will be prepared for each lecture and will address your concerns and questions regarding the subject matter, and course policies. You are also welcome to stop by my office, and if I do not have time at that moment, I will be happy to make an appointment with you during a more convenient time period. I also will respond to your emails promptly (within 24 hrs). I will have read the papers for our discussions, and I will have prepared my own ideas about issues that I think are important to bring up during discussion (if needed). I will respect your opinions, and when I disagree with your interpretations, I will explain why. I will listen, and I will encourage everyone in the class to participate in discussion. I will welcome your questions during my lectures.

Your Responsibilities: Be prepared for class -- this means that you will have read background material (recommended reading options) as well as the specific readings for the discussions. As you read those materials, you will think about the material in a deep way; you will challenge yourself; when you don't understand, you will seek input from your peers and be prepared to share your insights during class. You will thoughtfully participate in class discussions. You will challenge other when you disagree, but you will do this in a respectful manner. When others challenge you, you will take the opportunity to explain your ideas more fully, without taking the challenge as a personal attack. When you are responsible for leading a discussion section, you will have prepared sufficiently to facilitate an interesting exchange of ideas. You will encourage others to participate. If you are not leading the discussion, you will do the readings, you will have thought

deeply about the material and you will have prepared some interesting topics that you can help with the analysis and discussion of the paper.

VIII. Assessments and Grading

A. Grading:

I expect this to evolve over the next few years. For this semester, it's going to be pretty "simple". You will be evaluated on four activities:

1. *Homework*: I will be giving homework assignments throughout the semester. These are intended to: a) give you practice with some basic tools and concepts; and b) give you a chance to evaluate how well you understand the material. I expect about 10 assignments. Each homework will be given a discrete score (1, 2, 3). All homework combined will contribute 25% of total score
2. *Exams*: There will be two exams. This will be the first time in my career in which I've given exams in a graduate course. I really don't like this, but because this course is required by OSE and some forms of objective assessment are needed, I'm going to give it a try. The exams will each cover material presented in lectures, from the readings and discussion, and from the homework. 25% of total score.
3. *Class participation*. This is essential. I expect everyone to contribute to discussions on a daily basis. Each week, I will assign each student a score (1, 2, 3) based on the quality of their contributions. If you talk a lot and spout meaningless banter, you'll get a low score. You'll get the same if you sit quietly and don't participate. The highest score will be given to students who are engaged, provide others the opportunity to participate, and offer thoughtful contributions. Please note that "thoughtful contributions" do not require that you "know" the concepts. Only that you are thinking and working through ideas in a thoughtful way. 25% of total score.
4. *Discussions*. Each student will lead (or co-lead) several discussions. You will be given a score (1, 2, 3) based upon the quality of your presentation and the way in which you guide the subsequent discussion. 25% of total score.

Excused absences will have missing assignments replaced with the mean from the other assignments. Your final grade will be based on a final score, based upon the above four components, relative to the highest score in the class (i.e., "X"):

A:	≥93% of X
A-:	≥90% of X
B+:	≥87% of X
B:	≥83% of X
B-:	≥80% of X
C+:	≥77% of X
C:	≥73% of X
C-:	≥70% of X
D:	≥60% of X
F:	<60% of X

IX. Email Communication

All email correspondence to me should be sent to my uga email (osenberg@uga.edu). Phone calls may not be answered.

X. Attendance

Students are expected to attend all classes (even if you are auditing the course and not officially enrolled). If you miss class, due to illness or a scientific conference, please let me know as soon as possible. You are still expected to have done the readings for the day and to have obtained notes from another one of the students.

XI. Conduct in Class

Please be courteous and do not talk privately during lecture. All discussion should engage the entire class. Silence your cell phones prior to class. You can take notes on your laptops or tablets and use them to view pdfs of the readings. But do not check email, scan Facebook, text your buddy, etc. Your attention should be focused on the class material and the person speaking.

XII. Academic Honesty and the Honor Code

I expect all students to adhere to (and to have read) the University's [A Culture Honesty](#). I expect that each student "will be academically honest in all of [her/his] academic work and will not tolerate academic dishonesty of others".

I encourage you to work with other students in the class, to share your ideas freely, and to collaborate when jointly leading discussions or giving class presentations. However, I expect all graded work that is submitted to be a reflection of their own work. Any contribution from another individual must be credited (e.g., include an acknowledgement section that says "I thank Joe Y and Susan X. for their helpful comments about phase-planes, and George for providing helpful insights as we collaborated on homework problem 2").

XIII. Accommodations for Students with Disabilities

Students who will require a classroom accommodation for a disability must contact the [Disability Resource Center](#) and inform the instructor of any special accommodations that are required.

XIV. Counseling Services

Graduate school can be stressful. If you are having challenges that exceed the support offered by your normal social network and professional mentors and peers, help is available on-campus. Please contact the [Counseling and Psychiatric Services](#) at UGA.