

## PCB 5338: Principles of Ecosystem Ecology

### Course Information

**Instructor:** Amanda Subalusky

**Office hours:** Group office hours after every class. Individual meetings by appointment by Zoom or in my office in Carr 518a

**Course website:** Canvas (<https://elearning.ufl.edu/>)

**Please use Canvas Mail for all course-related e-mails.**

**Class will meet in Carr 521 at the following times:**

Wednesday periods 4-5 (10:40-12:35)

Friday period 4 (10:40-11:30)

### Course Description

**Overview:** We will learn about the basic principles that govern the structure and function of ecosystems, with an emphasis on carbon and nutrient cycling in the context of climate change and other global change drivers (e.g., nitrogen deposition, land use change, and altered disturbance regimes). Examples of the questions we will address include: How is ecosystem carbon storage responding to climate change? How has land use change influenced nitrogen and phosphorus cycling in aquatic and terrestrial ecosystems? How does biodiversity influence ecosystem function? How can conservation and restoration practitioners incorporate principles of ecosystem ecology in their practice? We will cover both fundamental principles and recent, cutting-edge research. We will cover terrestrial, freshwater, and marine systems to gain a holistic and global perspective on ecosystem ecology.

**Format:**

- Class attendance is required, and students are expected to ask questions and participate in discussions.
- Roughly 1/3 of class time will be lecture, and 2/3 will be discussions of journal articles, readings, or exercises. These discussions will include small-group interactions and whole-class discussions.
- We will typically read/discuss the equivalent of two full-length (e.g., 10 page) papers per week.
- Each student will lead one discussion during the semester.
- For most readings, there will also be a written homework assignment due before class.
- There will be two take-home exams and one written report.

**Textbook:**

There is no textbook for this course, as we will be mostly using lecture slides and assigned readings. However, a textbook that could be used as a resource is available for free through UF in a pdf format, *Principles of Terrestrial Ecosystem Ecology, Second Edition* by Chapin et al. You can download it at the link below, although you may need to be on the UF network (either on campus, or via VPN) to do so: <https://link.springer.com/book/10.1007%2F978-1-4419-9504-9>

**Reading assignments:**

There will be a reading assignment for most weeks. Please come to class prepared to discuss each assignment. Most assignments will require at least one hour of careful reading and thinking. Often, you will need to spend several hours to get a good grasp of a reading assignment, including time spent looking up unfamiliar terms or concepts. You are not expected to understand every detail of every assigned reading, but you should aim to understand the context and main points. You do not need to read supplementary sections of papers (Appendices, Supplementary Material, etc.) unless these are specifically assigned.

**Homework:**

Most readings are paired with a homework assignment. Homework assignments are due before class unless stated otherwise. These assignments are intended to help you learn more from the reading and prepare to participate in class discussions. You are encouraged to discuss readings with other students outside of class, but homework should be written in your own words and should reflect your own understanding of the material. ***Homework should always be written in your own words. Although you may use AI to help you gain a synthetic understanding of the paper, you may not use AI to write your homework assignments.***

**Leading a discussion:**

Each student will lead one discussion during the semester. Typically, about 45 minutes will be allocated for these discussions. Each discussion will target one full-length paper or two shorter papers. Detailed instructions will be posted on the course website prior to the discussion sign-up period.

**Exams:**

There will be two take-home exams that cover lectures and readings. Exams are cumulative but will emphasize material since the previous exam.

**Written report:**

There will be a written report assigned during the last third of the course that will give you the opportunity to explore an area of ecosystem ecology more deeply. You will use primary literature to address a question of your choice. Reports will be ~2500 words. Detailed instructions will be posted on the course website prior to the assignment.

## Course Policies

**Grade distribution:**

Your final semester percent grade will be the percent of points earned out of the total possible. Points are distributed as follows:

- **Homework:** Typically 10 points per assignment (roughly 150 total points)
- **Leading a discussion:** 50 points
- **Exam 1:** 50 points
- **Exam 2:** 50 points
- **Written report:** 100 points

**Grade scale:**

A ≥ 92.5%; A- ≥ 89.5%; B+ ≥ 86.5%; B ≥ 82.5%; B- ≥ 79.5%; C+ ≥ 76.5%; C ≥ 72.5%; C- ≥ 69.5%; D+ ≥ 66.5%; D ≥ 59.5%; D- ≥ 56.5%; E < 56.5%

Grades will not be rounded; e.g., 89.50 is an A-, and 89.49 is a B+.

**Absences:**

Please notify the instructor ahead of time if you plan to miss class. Unexcused absences will result in a 50% penalty for any homework submitted on that date. Absences will be excused according to standard UF policies (illness, religious holidays, etc.) and for academic and career-related reasons (attending conferences, job interviews, etc.). You are welcome to schedule a meeting with the instructor (by zoom, phone, etc.) to discuss excused absences if you would like. But you should ***always send a written explanation by e-mail to document an excused absence.***

**Missed assignments and deadlines:**

- **Homework:** You are expected to submit all homework assignments. If you know ahead of time that you will miss class, please plan to submit your homework before the missed class. If this is not possible, or if you miss class due to an expected reason, please contact the instructor. Homework cannot be submitted late except under special circumstances (e.g., documented illness).
- **Exams:** Exams are take-home. If you know ahead of time that you will not be able to turn in your exam on the specified due date, contact the instructor in advance. If you miss the submission deadline for an unexpected reason, contact the instructor as soon as you can. Without a documented and acceptable excuse, late exams are subject to a 10% grade penalty per day (up to a maximum of 7 days). If you do not submit your exam on time, you may forfeit your opportunity to participate in the collaborative exam stage.

**Teaching philosophy:**

Students are encouraged to employ critical thinking and to rely on data and verifiable sources to interrogate all assigned readings and subject matter in this course as a way of determining whether they agree with their classmates and/or their instructor. No lesson is intended to espouse, promote, advance, inculcate, or compel a particular feeling, perception, viewpoint or belief.

## Additional Information and Resources

This course complies with all UF academic policies. For information on those policies and for resources for students, please see this link: <https://syllabus.ufl.edu/syllabus-policy/uf-syllabus-policy-links/>

**Students Requiring Accommodation:**

Students who experience learning barriers and would like to request academic accommodations should connect with the Disability Resource Center by visiting <https://disability.ufl.edu/students/get-started/>. It is important for students to share their accommodation letter with me and discuss their access needs as early as possible in the semester.