

Instructor:

Dr. Alison Boyer

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Teaching Assistants:

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Communication. Check the Blackboard site and your UTK email frequently. We will post lecture outlines after each class period. All handouts, readings, and out-of-class assignments will be posted there.

Textbook. Ecology, 2nd edition by Cain, Bowman and Hacker. There is a PDF version available, and a looseleaf version, as well as the hardcover—they are all the same but vary in price. Quizzes will focus on the book readings.

Learning Objectives. By the end of this course, you will understand the major ecological patterns in nature and the factors that cause them. Your writing skills, analytical, and quantitative abilities, and talents in the field will be reinforced and improved. In short, you will be a more well-rounded biologist and an ecologically aware citizen.

Assessment. To assess how well you meet these learning objectives, you will have comprehensive exams, writing assignments, in-class exercises, online quizzes, and you will spend time in the computer lab enhancing your quantitative skills. You'll also spend time in the field doing several research projects. I do not grade on a curve. Your grades will be based on the following schemes:

| Assessment | Points possible |
|------------------------------------|-----------------|
| Exams (3) | 150 |
| Final exam | 75 |
| Quizzes and lab points (estimated) | 75 |
| Rapid Ecological Study | 100 |
| Final Project | 125 |
| Bonus points (from seminars) | (10) |
| Total | 525 |

| Grade | Percentage (%) | Grade | Percentage (%) |
|-------|----------------|-------|----------------|
| A | 93-100 | C | 73-76 |
| A- | 90-92 | C- | 70-72 |
| B+ | 87-89 | D+ | 67-69 |
| B | 83-86 | D | 63-66 |
| B- | 80-82 | D- | 60-62 |
| C+ | 77-79 | F | 0-59 |

Exams. On exams I will focus mostly on the lecture material, but some information will come from the book. In addition, you will be assigned several supplementary readings, and

will be tested on them. The format will include multiple choice, short answer, essay, and simple math problems. All exams are comprehensive, but you should focus most of your study on the “new” material. I will give a review sheet about one week before each exam.

Quizzes. First of all, don’t let the quizzes scare you; they exist to help you stay on top of the reading. They will be conducted online each week and are due by midnight on each Monday. Other in-class assignments will largely be based on group work in class.

Labs. The aim of labs is three-fold. First, I want you to learn the toolskills required to do an ecological study. Second, I hope the principles you learn in lecture will be reinforced in the lab and field. Third, I want you to be stimulated to think creatively, critically, and quantitatively and to identify and understand major ecological patterns in the field. Many of the labs will be conducted outdoors, so be sure you are prepared with rain gear, sturdy shoes, a hat, snacks, water, pens, a field notebook, and a bag to carry all this stuff.

Your first major lab project will be a Rapid Ecological Study (RES) and will introduce you to the process of doing ecology. You will identify and ecological question. You will collect and analyze data. And you will write a short paper. More detailed instructions will be given to you soon by your TAs. Labs always meet in Hesler Room 302.

Final Project. This project is one of the most important parts of the course. I want you to do ecology, and this is your biggest opportunity to do it. I also want you to work with your colleagues because almost nothing in science can be done alone. By the 8th week of the semester, you and probably 2-3 other students will have gone to the field and decided on an idea for a final project. You will then have about one month to collect the data and prepare the paper. During this month, your group is required to meet with your TA or me at least three times. We are happy to review procedures, drafts of papers, and statistical analyses. We’re really happy to help in almost any way you’d like. More instructions for the final project will be available soon.

Ecology Seminar Series (A.K.A., Bonus Points). Most Fridays at 3:30, the Department of Ecology and Evolutionary Biology has a seminar in Science & Engineering, Room 307. This is a tremendous opportunity for you to learn about many different topics in ecology and to see how different people convey their findings. Once you’ve attended one of these seminars, write a one-page summary of it and email it to Noelia at (mbarrios@utk.edu). You may get up to 2 bonus points for each one. You can get points for attending 5 seminars, and these write-ups are due one week after the seminar. If you can’t make the seminars, come talk to us about other options by the end of the 8th week of the semester. The seminar schedule should be posted here <http://eeb.bio.utk.edu>.

Missed And Late Assignments. Only under very special circumstances will I give a makeup exam. You might be able to take a makeup exam if you alert me that you are going to miss it. If you know you are going to miss a lab, you must alert your TA as far in advance as possible. Email is always the best way to contact me or your TA. Unless there are extenuating circumstances, work turned in late will lose 25% of the total available points each day it is late. You cannot make up quizzes.

Any student who feels s/he may need an accommodation based on the impact of a disability should contact me privately to discuss your specific needs.

Schedule:

| Day | Lecture | Book Chapter | Lab |
|------------|---|---------------------|-----------------------|
| 23-Aug | The science of ecology | | |
| 28-Aug | Doing ecology 1 | 1 | Generating Hypotheses |
| 30-Aug | Doing ecology 2 | | |
| 4-Sep | The physical environment | 2, 3 | Addressing Hypotheses |
| 6-Sep | Coping with the environment | 4, 5 | |
| 11-Sep | Evolution and ecology | 6 | Analyzing your data |
| 13-Sep | Life history | 7 | |
| 18-Sep | Distribution and abundance | 8 | Toolkit Lab |
| 20-Sep | Population growth | 9 | |
| 25-Sep | Population regulation | 10 | Toolkit Lab |
| 27-Sep | Exam | | |
| 2-Oct | Competition | 11 | Models Lab |
| 4-Oct | Predation and herbivory | 12 | |
| 9-Oct | Parasitism & Disease | 13 | No labs |
| 11-Oct | No class: Fall Break | | |
| 16-Oct | Mutualism | 14 | Group projects |
| 18-Oct | Biological Invasions 1 (with Dr. Eric Larson) | | |
| 23-Oct | Biological invasions 2 (with Jessica) | | Group projects |
| 25-Oct | Exam | | |
| 30-Oct | The nature of the community | 15, 16 | Group projects |
| 1-Nov | Biogeography (with Mariano) | 17, 18 | |
| 6-Nov | Production | 19 | Group projects |
| 8-Nov | Energy flow and food webs | 20 | |
| 13-Nov | Nutrient supply and cycling | 21 | Group projects |
| 15-Nov | Exam | | |
| 20-Nov | Paleoecology | | No labs |
| 22-Nov | No class: Thanksgiving Break | | |
| 27-Nov | Conservation and extinction | 22, 23 | Final presentations |
| 29-Nov | Global ecology | 24 | |
| 4-Dec | Summary | | |
| 11-Dec | Final 8:00-10:00am | | |