

COMMUNITY ECOLOGY
BIOLOGY 432/BIOLOGY 580

INSTRUCTOR: Dr. Megan Donahue, mjd37@humboldt.edu, x3219
OFFICE HOURS: Wed 2-4, Fri 10-12 or by appointment in 236 Science B

LECTURE & DISCUSSION: Thursday 11 – 12:50 in 460 Science A

LAB: Thursday 2-4:50 in 364 Science A

SUGGESTED TEXT:

Ecology: From Individuals to Ecosystems, Begon, Townsend, & Harper, 4th ed, 2006

PREREQUISITES:

Biology 330 or equivalent

LECTURE

The lecture portion of this class will introduce you to the patterns and processes of ecological communities. The class will cover patterns of species distributions, community structure, biogeography, and biodiversity and the processes that contribute to these patterns, including species interactions, trophic dynamics, and community assembly. I will spend one hour of our class meeting time lecturing. Student participation and feedback are important – please feel free to ask questions during the lecture.

DISCUSSION

In addition to learning fundamental concepts of community ecology, you will be reading the primary literature. Each Thursday, we will spend one hour of class discussing assigned readings from the primary literature. Each student will be responsible for leading discussions on two papers during the semester. Review and discussion of selected papers are key elements of this course. I hope that class discussion will not only give you more detailed information on the topic *du jour*, but sharpen your critical thinking skills and provide examples of the varied approaches to community ecology.

The leaders of each discussion should prepare a short summary of the paper, no more than 5-6 minutes (yes, I will cut you off). The summary should serve as a quick reminder of the paper's contents, but is not the emphasis of the presentation. **The discussion leader's primary responsibility is to prompt discussion among members of the class by asking questions and by pointing out the novel or potentially controversial aspects of the paper.** Don't worry if you are the leader and you don't get to do much talking – if the discussion is rolling along, you've done your job. You may need to break into the discussion to keep it focused and to allow a variety of students to participate. Discussion leaders may find it useful to read additional articles relevant to the paper, in order to place the paper in perspective or to supply the class with more details on the study. **You may find it helpful to prepare a short handout that summarizes the main points of the paper and lists the discussion questions that you develop.**

To prepare for the discussion, the entire class should endeavor to answer the following questions as they read the papers: **What were the goals of the study? Were the methods and design appropriate? Did the results answer the original question? Did the results raise other questions or generate new hypotheses? What were the novel aspects of the study?**

LAB & FIELD

The purpose of the laboratory portion of this class is to introduce you to research in community ecology. During lab, we will develop and perform two studies as a class: one observational experiment and one manipulative experiment. For the observational experiment, we will use multivariate statistical methods to describe the community. The design and analysis of the manipulative experiment will depend on the project we choose as a class. Labs will not meet every week of the term, but you should expect to spend some time maintaining our class experiment. For a few of our lab dates, we will spend time looking closely at the ecological communities in our area. For your laboratory grade, you will write a paper based on one of the class experiments.

GRADUATE CREDIT (FOR THOSE ENROLLED IN BIOL 580)

In order to receive graduate credit for this course, there are additional expectations for this course. During lab time, graduate students will introduce the class to a local ecological community with which s/he is familiar. Students may work in pairs on this, if that is appropriate. Preferably, these will take the form of a field trip to that community. If this is not possible or appropriate in your case, then you may give a powerpoint presentation on the community during lab time.

EVALUATION

Exams will be short answer and essay questions on material from lecture and discussion. There will be one in-class midterm examination which you will have the entire lecture and discussion period to complete. There will be a take-home final due on Thursday, May 10th at 11am. Writing skills are an important part of professional development, so well-written essays are essential for top marks. Writing skills will receive more emphasis on the final exam, when students will have more time to groom their work. Students may not work together on exams.

Students will be evaluated on their discussion presentations during the course and their overall participation during discussion. To receive full marks for participation during discussion, you need not dominate the floor. Rather, make a habit of contributing something thoughtful during most discussions. If you are inclined to be shy, jot down a few insights while you are reading each paper. When there is a lull in the conversation or the topic comes up, you can use these insights to start a new part of our discussion.

The laboratory portion of the class will be evaluated based on your write up of one of our class projects. This write-up will be worth 150 points.

POINTS

Leading Discussion (2 × 50)	100
Participation in Discussion	50
Midterm Exam	100
Final Exam	200
Paper	150
Total	600