

# Bi 130 Introduction to Ecology

## Information Sheet and Syllabus for Fall Quarter 2008

### Lecture Instructor

**Peter Wetherwax** (pwax@uoregon.edu)

*Office Hours:* Wednesdays 1:20-2:15 starting in 123 Pacific after lecture and then moving to office in 313 Pacific

### Lab Instructors

**Jarrett Arnold** (jarnold@uoregon.edu)

*Lab Sections:* 12:00, 1:00, 2:00, 3:00

*Office Hours:* Fridays 12:00-1:00 in 360 Onyx

**Erin Herring** (eherring@uoregon.edu)

*Lab Sections:* 9:00, 10:00, 11:00, 4:00

*Office Hours:* Mondays 10:30-11:30 in 217 Pacific

### Course Background and Goals

This course is designed for non-majors with an interest in understanding the fundamentals of ecology. It is an introductory course, designed for freshmen and sophomores, and satisfies University general education breadth requirements for natural sciences. Ecology can be narrowly defined as the study of the distribution and abundance of organisms. It looks at anything that influences where and when species are present and how organisms interact with their environment: an environment that includes both physical characteristics and other organisms

A central theme for this course will be biodiversity: What is it? How do you measure it? Why is it important? How can it be maintained? In order to fully understand biodiversity we must first have a basic understanding of the kinds of organisms that exist in the world. There will be several mini-lectures and labs on the major groups of organisms: bacteria, fungi, plants and animals.

By the end of the term, we expect that you will not only understand the significance of several fundamental concepts of ecology, but you will also appreciate how some aspects of these concepts relate directly to events in your own life. In particular, we hope that you will have gained skill and confidence that will enable you to analyze, criticize, and utilize biological information that you encounter in news media when it comes time for you to make personal decisions such as how many children you want to have, what kinds of foods you want to eat, how you decide to get yourself to school or work, how you will vote on a wide range of environmental issues, or which groups you will choose to join or to give money.

### Course Format

**Lectures** (Mondays and Wednesdays, 12:00-1:20 in 123 Pacific)

You should do the assigned readings before coming to the lectures. We will post lecture guides on Blackboard by the morning before each lecture. You should print these out and bring them to class. These guides will include an outline of the lecture as well as activities that will help you to stay actively involved during the lecture. You will not turn these in but your active participation will help you to truly understand the material and better prepare you for exams.

There will be exams (either a quiz or midterm) every Monday and lab preparation every Wednesday so it is important to come to every lecture. If you don't plan to come to lectures, then we highly suggest that you find another 100-level course to take.

**Labs** (Thursdays in 111 Huestis)

The labs will focus on biodiversity, the central theme of this course. Participation in the lab section is your opportunity to interact more closely with your peers and with your instructors. We consider the labs to be an integral part of the course, not just an add-on to lecture. We have tried to design active learning experiences that will broaden your understanding of what the science of ecology is all about.

Getting a good grade in the class will be much more likely if you regularly attend these sections. Attendance is mandatory and will be part of your lab grade. It is not possible to make up missed labs. If you know in advance that you can't make a particular lab, but could attend another section, then notify your GTF IN ADVANCE to get permission.

You can make up one missed lab by writing a four-page (double-spaced) research paper on the topic of that week's lab. The paper should include at least four references, listed on a fifth page. At least three of the references need to be from sources other than websites. You need to contact your GTF by the Friday after your missed lab in order to do the make-up assignment. Make-up assignments are due by the beginning of the next lab. If you miss a lab you are still responsible for the material covered in that lab. You should contact one or more fellow students to find out what you missed in the lab. Please do not expect your GTF to give you a personal lecture on the material you missed. (Note that accommodations for making up labs or exams will not be made for Club Sports activities – please don't ask.)

## Evaluation

<u>component</u>	<u>% of grade</u>
<b>Lab (30%)</b>	
Lab handouts, participation and attendance (9 labs, 2% each)	18%
Lab practical exam	12%
<b>Lecture (70%)</b>	
Quizzes	20%
Midterm Exam	20%
Final Exam	30%

### **Blackboard** ([blackboard.uoregon.edu](http://blackboard.uoregon.edu))

There will be many files posted on blackboard during the term including:

- Lecture guides: these will be posted in advance of each lecture (by 8AM on the morning before each lecture). You should print these out and bring them to lecture.
- Problem sets (practice exam questions)
- Additional readings
- Lecture slides will be posted after each lecture.
- Grades

### **Posting of Grades**

Your GTF will let you know when they will be posting your scores for exams and assignments on blackboard. Check your scores each time they are posted as you will have only one week after the posting to notify your GTF of errors.

### **Exams**

Exams are graded by the GTFs under the supervision of the faculty. To promote consistency, a single person grades each question.

**Quizzes:** Every Monday there will be a quiz given on the past two or three lectures. The quiz will be very short, about 15 minutes. Most questions will be very similar to the questions on that week's problem set. The best way to do well on the quizzes is to work on the problems and then go to office hours to get help. (Note that we have scheduled office hours on Fridays and Mondays, which works out well for getting help for Monday exams.) We will drop the lowest quiz score when calculating your total quiz grade. If you miss a quiz, for any reason, that will be the score that is dropped. If you take all eight quizzes then we will drop the lowest *two* quizzes and use the average of your top six quizzes to calculate your final quiz grade. (Note that accommodations for making up labs or exams will not be made for Club Sports activities – please don't ask.)

**Midterm and Final:** The dates for these exams can be found on the lecture/lab schedule on the following page of this syllabus. These exams will cover material from all aspects of the course including lectures, problem and readings. Exams will be designed to probe a deep understanding of the concepts and principles discussed, and an ability to apply the concepts to novel situations rather than a memorization of detail. Everyone is required to take the final exam which covers the entire course and will be given on **Tuesday** of final's week. **There will be no early or late exams given.**

**Lab Practical exam:** Your GTF will give an exam on lab material during week-8 lab. The exam may include actual organisms that you have seen during previous labs and will be open-notes (so you are encouraged to take notes during the labs). Please note that you will only have 50 minutes to take the exam so you will not have time to look up every answer in your notes (i.e. you still need to study). Your GTF will discuss the format of the exam during lecture or lab.

### **Readings**

There is a course packet with readings from a biology textbook, *Explore Life* by Postlethwait and Hopson. These are listed, by page, in the schedule at the end of this syllabus. Additional articles will be posted on the course website. There will be questions from the readings on the exams.

### **Problem Sets**

Weekly problem sets will be posted on Blackboard. You are strongly encouraged to work through these problems every week. The quiz questions will be very similar to the questions on the problem sets. If you have trouble solving the problems then please come see one of the three instructors during their office hour. (Office hours are listed on the first page of this syllabus.)<sup>3</sup>

## Schedule

Week	Date	Lectures and Labs	Readings*
1	9/29 10/1 10/2	Lecture 1: introduction to ecology Lecture 2: introduction to biodiversity/kingdom biodiversity/ <b>introduce lab</b> <i>Lab 1: campus walk: kingdoms and ecological questions</i>	1-2 3-5, 49-51
2	10/6 10/8 10/9	Lecture 3: biomes/ <b>quiz</b> Lecture 4: ecosystem energy/bacteria and fungi biodiversity/ <b>introduce lab</b> <i>Lab 2: biodiversity of cells</i>	6-10 11-17, 52-62
3	10/13 10/15 10/16	Lecture 5: ecosystem nutrient cycling/ <b>quiz</b> Lecture 6: nutrients/plant biodiversity/ <b>introduce lab</b> <i>Lab 3: plant biodiversity</i>	17-20 20-23, 63
4	10/20 10/22 10/23	Lecture 7: population growth without resource limits/ <b>quiz</b> Lecture 8: population growth with resource limits/invertebrate biodiversity/ <b>introduce lab</b> <i>Lab 4: freshwater biodiversity</i>	24-29 29-31,64-68
5	10/27 10/29 10/30	Lecture 9: human population growth/ <b>quiz</b> Lecture 10: introduction to community ecology/ <b>introduce lab</b> <i>Lab 5: review for midterm</i>	31-35
6	11/3 11/5 11/6	<b>Midterm</b> (lectures 1-9, labs 1-5) Lecture 11: community species interactions: competition and herbivory/ <b>introduce lab</b> <i>Lab 6: soil fauna biodiversity</i>	36-43
7	11/10 11/12 11/13	Lecture 12: community species interactions: predation and mutualism/ <b>quiz</b> Lecture 13: keystone species and species introductions/vertebrate biodiversity/ <b>introduce lab</b> <i>Lab 7: predator-prey experiment/review for lab practical</i>	36-43
8	11/17 11/19 11/20	Lecture 14: community succession/ <b>quiz</b> Lecture 15: behavioral ecology/ <b>introduce lab</b> <i>Lab 8: lab practical exam</i>	44-45
9	11/24 11/26 11/27	Lecture 16: behavioral ecology/ <b>quiz</b> Thanksgiving: no lecture <i>Thanksgiving: no labs</i>	
10	12/1 12/3 12/4	Lecture 17: patterns of biodiversity/ <b>quiz</b> Lecture 18: conservation biology/ <b>introduce lab</b> <i>Lab 9: final exam review</i>	
Finals	12/9	<b>Final exam Tuesday 10:15 in 123 Pacific</b> (covers the entire course)	

\*these are pages from the course packet. Addition readings will be posted on Blackboard and announced in class.

### **Professional Conduct**

This syllabus is an agreement about how each of us will carry out our duties and conduct ourselves. You should read this carefully and talk to us about it as soon as you have any questions. We are always grateful for suggestions on how to improve the course. We expect all of us to follow University guidelines for behavior. One of these has to do with academic dishonesty, including plagiarism or taking credit for the work of others. This is a serious offense and will be treated according to the guidelines in the student code. This doesn't mean you can't talk with other students about what you are thinking or writing; it does mean that when you write something, it should be in your own words, not copied from someone else. We take this seriously and have sent several academic dishonesty cases to Student Judicial Affairs. It is one of the least favorite parts of our job and it can have serious consequences on your academic career. For your sake and for ours, please follow the conduct code.

We ask that we all do our best to be intellectually honest while also being tolerant of personal differences. We welcome and encourage intellectual controversy--we think it is essential to real learning. At the same time, we ask that we all respect the rights of others to hold different opinions, even as we challenge the ideas supporting those opinions. We view the grade you earn as a reflection of the quality of work you have done, but not of you as a person.

Out of respect for other students, please arrive to class on time and stay until class is over. If, on occasion, you do arrive late, please be considerate of others and enter quietly at a time and in such a way that you don't disturb other students. If you need to leave early, please sit near an exit so that you can leave without disrupting the class. Please don't interfere with the ability of other students to learn by making noise when someone else (instructor or classmate) is talking. If you bring a cell phone to class, please turn it off during class. Please use computers in lecture only to take notes (no surfing, email, games etc.).

Crises happen; if you have a problem that interferes with your ability to do the work in this class, please tell one of us about it as soon as you can. We are willing to give grades of incomplete or to make special arrangements when the need is real and when you have done your best to deal with the situation and have let us know about it in a timely manner.