

ECOSYSTEM ECOLOGY (Bio 386/586)

Lecture 1:50-2:50 Mon.,Wed. (HS 367) Lab 3:00-5:00 Mon (HS 51, HS 201)

Instructor: Dr. Bob Stelzer

Contact Information

<u>Office Hours</u>	<u>Location</u>	<u>Phone</u>	<u>E-mail</u>
Mon. 10:30-11:30	Halsey 150	424-0845	stelzer@uwosh.edu
Wed. 11:30-12:30			
and by appointment			

Textbooks/Readings

Principles of Terrestrial Ecosystem Ecology, 2nd edition. 2011. F. Stuart Chapin, Pamela A. Matson, and Peter M. Vitousek.

Various papers for discussion or background reading on D2L (see syllabus)

Lab descriptions on D2L (see syllabus)

Overview and Goals of Course

Ecosystem Ecology focuses on how aquatic and terrestrial ecosystems operate with emphasis on the flow of energy and matter and the factors that regulate these processes. Because ecosystems cannot be understood without some knowledge of other fields such as chemistry and hydrology, we will borrow from these disciplines when appropriate. Understanding the roles of species and communities in ecosystem dynamics is important so we will also draw on other areas of ecology. Considerable time will be spent investigating the methods scientists use to study ecosystems. The labs will introduce you to some of these methods. The goals of the course are: 1) to develop an introductory-level understanding of ecosystems and ecosystem processes, 2) to learn a variety of approaches and methods used in the study of ecosystems, 3) to be able to apply knowledge about ecosystems and the factors regulating them to new situations, and 4) to further your training as scientists.

Evaluation

You will be evaluated based on 2 lecture exams, 2 lab reports, a group research project, the quantity and quality of your contributions to class discussions and participation during lecture and lab activities, and problem sets. Your group research project grade will be based on the proposal, the quality of the work during completion of the project, effort put into the project, and the final presentation. It is expected that all members of the group will contribute equally in all phases of the project.

Activity	Percentage of Grade
Lecture exam 1	20%
Lecture exam 2	15%
Metabolism lab report (long)	15%
Phosphorus uptake lab report (short)	10%
Group research project	20%
Discussion and participation	10%
Problem sets and data sets	10%

Grading Scale

A	91-100
A-	89-90
B+	87-88
B	80-86
B-	78-79
C+	76-77
C	70-75
C-	68-69
D+	66-67
D	60-65
D-	58-59
F	< 58

Graduate students must earn a C or higher to pass the course. No D grades are available for graduate students.

Exams must be taken and assignments must be turned in at the beginning of the class period on the due dates indicated in the Lecture and Lab Schedule. Make-up exams or extensions of due dates will only be given if there is a valid, documented excuse (e.g. illness, family emergency). You will need to contact me within 24 hrs of the missed activity if you have an excused absence so that you can arrange to make up a missed assignment without penalty. If assignments are turned in late for an unexcused reason (e.g. oversleeping; needing more time to complete the assignment because of busyness; auditions for American Idol) 15% will be deducted from the earned points for every day an assignment is late. After the second late assignment, no further late assignments will be accepted (therefore you will get 0 points for those assignments). Make-up exams must be taken within one week of the missed exam. Make-up exams will not be identical to regular exams.

For the Long lab report you should use the traditional format for scientific reports (Abstract, Introduction, Methods, Results, Discussion, and Literature Cited). I will post “Guidelines for Full Lab Reports” on D2L. The short lab report will entail answering a series of questions. All lab reports must be turned in as hard copies. E-mailed lab reports will not normally be accepted.

Students with Disabilities: Students who have disabilities who wish to request academic adjustments should notify Disabilities Services so that appropriate accommodations can be made. For more information call or visit Disabilities Services (424-3100, Dempsey 125A) or see me.

Academic Integrity: If you decide to cheat on an exam or to engage in other forms of academic dishonesty you will be subject to the Student Academic Disciplinary Procedures as outlined in the Student Disciplinary Code-www.uwosh.edu/stuaff/images/student-discipline-code. Plagiarism has serious consequences. Examples of plagiarism are 1) “lifting” whole sentences/paragraphs from a source and including this material in your paper or lab report in

an unaltered or slightly altered form, 2) copying the work of another student and including it in your lab report and 3) paraphrasing from a source without citing that source

Cell Phones: Cell phones or similar devices must be turned off at all times during all class activities including field trips. If you need to have a cell phone on for some reason (e.g. to receive an emergency message during a field trip) I ask that you let me know ahead of time and engage the vibrate setting.

For Graduate Students (enrolled in Bio 586): In addition to the goals listed in the “Overview and Goals of Course” section above graduate students are expected to: 1) Display leadership qualities in lecture and lab, especially during class discussions, 2) Write a research paper or an article critique on a topic in ecosystem ecology. The paper (or critique) will account for 10% of your grade. The long lab report will account for 10% and the group project 15% of your grade (the percentages of the other categories are unchanged). I ask that you meet with me early in the semester to discuss your proposed topic.

Lecture and Lab Schedule

An asterisk in the schedule indicates 3 hr lab (regular lab slot + lecture slot on Monday) and in one case a 4 hr lab. GH = Halsey Greenhouse (5th floor)

Week	Readings	Lecture	Lab	Lab Meets
3-7 Feb	Chp. 1 PTEE	Introduction; Historical development of ecosystem concepts	Introduction to Group Research Projects	
10-14 Feb	Chp. 6 PTEE Chp. 5 PTEE (optional)	Primary production in terrestrial and aquatic ecosystems; Introduction to metabolism in streams	Lecture (cont'd); Group Research Project meetings; topics due	HS 51
17-21 Feb	<i>Rubbo et al. 2006</i>	Discuss <i>Rubbo et al.</i> paper	<i>Metabolism Lab-- Stream Biofilms*</i>	HS 51, GH, 1:50-5
24-28 Feb	Chp. 10 PTEE	Secondary production; Trophic-level interactions	<i>Metabolism Lab:</i> processing; Group Research Project proposals due; Metabolism Problem Set due	HS 51
3-7 March	Chp. 7 PTEE	Decomposition; Nutrient cycling in ecosystems: theory	Discussion of <i>Metabolism Lab</i> results; Begin Group Research Projects	HS 51, GH
10-14 March	Chp. 9 PTEE	Nutrient cycling in ecosystems: theory (cont'd); Mass Balance Problem Set due	<i>Metabolism Long Lab Report due;</i> Group Research Projects	HS 51, GH

Week	Readings	Lecture	Lab	Lab Meets
17-21 March		Exam 1 (March 17); Nutrient cycling in ecosystems: measurement		
24-28 March		Spring Break! *****	Spring Break! *****	
31 March- 4 April	<i>Lewis et al.</i> 2011; <i>Conley et al.</i> 2009	Eutrophication of freshwater and marine ecosystems; Discuss papers	<i>Phosphorus Uptake Lab:</i> Introduction; Group Research Project meetings	HS 51
7-11 April		Ecosystem Experiments	<i>Phosphorus Uptake Lab*</i> - Spring Brook Nutrient Limitation Problem Set due	Field 1:50-6
14-18 April		Discuss results from <i>Phosphorus Uptake Lab</i>	<i>Phosphorus Uptake Lab*</i> phosphorus measurement	HS 51 1:50-5
21-25 April	Chp.14 PTEE	Global climate change: pattern and process; Temporal dynamics of ecosystems	Group Research Projects	HS 51, GH
28 April- 2 May	<i>Graham et al.</i> 2013	Discuss <i>Graham et al.</i> paper Exam 2 (April 30)	Group Research Projects; Discuss <i>Phosphorus Uptake Lab</i>	HS 51, GH
5-9 May		Group Research Project Meetings	<i>Phosphorus Uptake - Short Lab Report Due;</i> Wetland field trip	Field
12-16 May		Group Research Presentations (May 12)		